

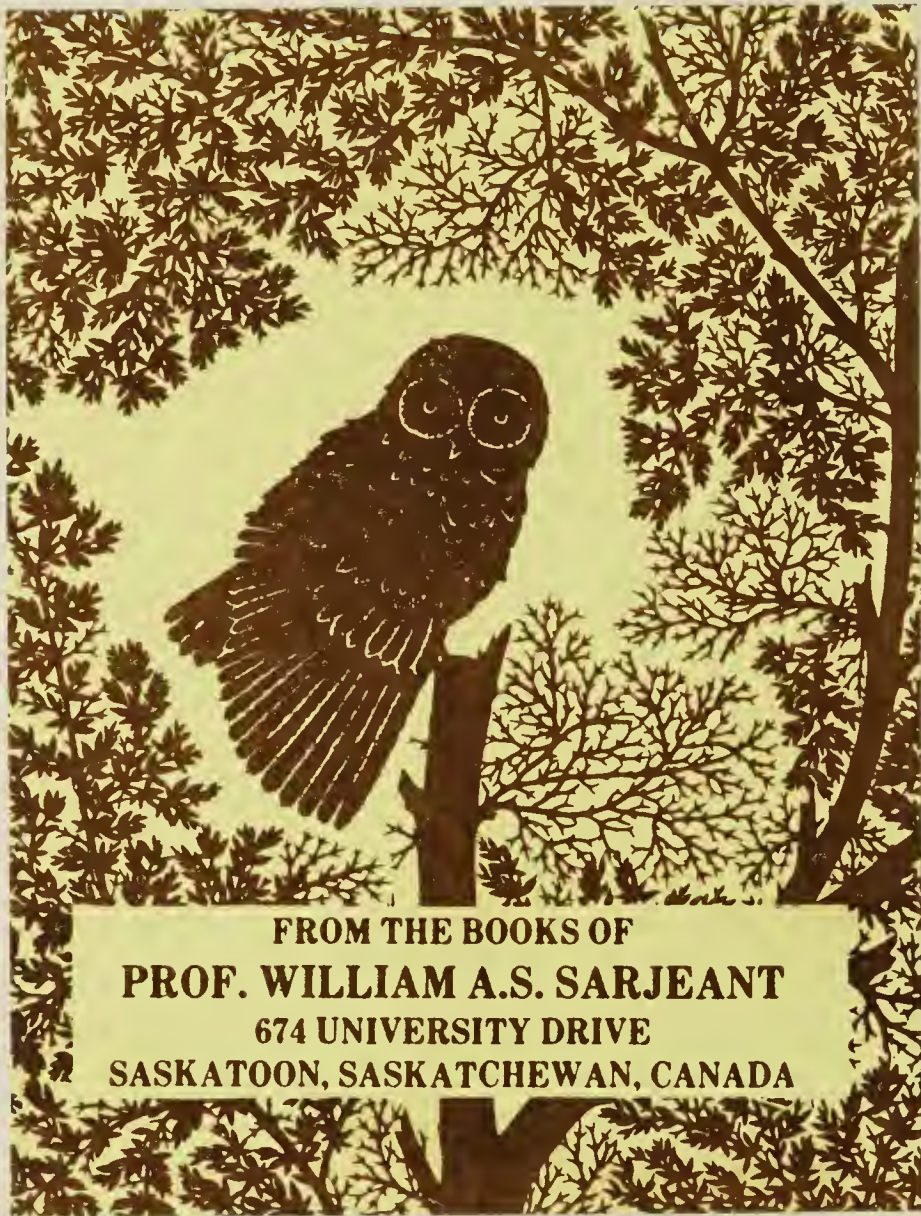
University of Alberta Library



0 1620 1669 8886

A32501





FROM THE BOOKS OF
PROF. WILLIAM A.S. SARJEANT
674 UNIVERSITY DRIVE
SASKATOON, SASKATCHEWAN, CANADA

William D. S. Sargent



Digitized by the Internet Archive
in 2019 with funding from
University of Alberta Libraries

<https://archive.org/details/bluejay391sask>

BLUE JAY

March 1981



The *Blue Jay*, founded in 1942 by Isabel M. Priestly, is a journal of natural history and conservation for Saskatchewan and adjacent regions. It is published quarterly by the Saskatchewan Natural History Society, Box 178 Saskatoon, Saskatchewan, S7K 3S1. CN ISSN 0006-5099.

Editors: Wayne Harris and Sheila Lamont.

Associate Editors: Margaret Belcher, J. Bernard Gollop, Ronald Hooper, George F. Ledingham, Robert W. Nero.

Editorial Assistants: Carman and Shirley Dodge, Wayne Renaud.

Circulation: Jim Mundy.

EDITORIAL INFORMATION: All items for publications should be addressed to the editors, Wayne Harris and Sheila Lamont at Box 414, Raymond, Saskatchewan, S0A 3J0.

Any material printed for the first time in the *Blue Jay* may be reproduced without permission. Credit lines will be appreciated. Use of photographs requires written permission from the photographer.

REPRINTS: Requests for quantities of reprints of any article in the *Blue Jay* should be sent to Midwest Litho Limited, Box 1466, Saskatoon, Saskatchewan S7K 3P7 within one month of publication. Contributors wishing a few extra copies of the current *Blue Jay* may get them at cost. Requests for these should be made to the editor when material is submitted for publication.

SUBSCRIPTION-MEMBERSHIPS: Send all renewals, new memberships, and correspondence concerning changes of address to the Treasurer, SNHS, Box 1784, Saskatoon, Saskatchewan, S7K 3S1.

The classes of membership in the Society are as follows: Regular \$10.00; Sustaining \$20.00; Patron \$30.00; Junior and Senior Citizen \$5.00. Sustaining and Patron memberships include the regular fee plus a donation for which receipt is available, upon request, for income tax purposes. Bulk orders (minimum of five to one address) are available to junior club members and educational institutions at the rate of \$10.00 for the first subscription and \$5.00 for each additional one.

BLUE JAY

Vol. 39, No. 1

March 1981

Pages 1 - 64

TRIBUTE TO GARY SEIB. <i>Lorne Scott</i>	3
sects	
SKIPPERS AND BUTTERFLIES OF A DISJUNCT ASPEN PARKLAND AREA IN ALBERTA. <i>Norbert G. Kondla</i>	4
rds	
39th ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT. <i>Mary I. Houston</i>	13
FORT SMITH, NORTHWEST TERRITORIES	24
THE WEMYSS SISTERS: SASKATCHEWAN'S FIRST LADY BIRDWATCHERS, 1898 - 1940. <i>C. S. Houston</i>	25
HISTORY OF RICHARDSON'S MERLIN IN SASKATCHEWAN. <i>C. S. Houston</i>	30
OBSERVATIONS OF THE MERLIN FROM UNITY, SASKATCHEWAN. <i>Allen G. Young</i>	38
NORTHERN PHALAROPE FLOCKS AT MIQUELON LAKE, ALBERTA. <i>E. Otto Höhn</i>	41
TWENTIETH ANNUAL NESTBOX REPORT FROM BRANDON, MANITOBA. <i>Mrs. John Lane, Barbara Robinson, Hazel Patmore, Mamie McCowan and Betty Shankland</i>	44
CALGARY AREA BLUEBIRD TRAILS — 1980. <i>Don Stiles</i>	46
WANTED: RED-NECKED GREBE NESTING LOCATIONS. <i>Kenneth de Smet</i>	49
PHOTOGRAPHS REQUIRED	49
ammals	
LATE SUMMER ACTIVITY OF SMALL-FOOTED, LONG-EARED AND BIG BROWN BATS IN DINOSAUR PARK, ALBERTA. <i>David B. Schowalter and Anne Allen</i>	50
SASKATCHEWAN CHRISTMAS MAMMAL COUNT — 1980. <i>Wayne C. Harris</i>	54
CHRISTMAS MAMMAL COUNT — ROUND LAKE, 1 JANUARY 1981	57

SUMMER MEETING AT WASKESIU LAKE, SASKATCHEWAN 57

Nature Library

THE GREAT GRAY OWL — PHANTOM OF THE NORTHERN FOREST. Reviewed by *C. Stuart Houston* 58

A FIELD GUIDE TO THE BIRDS EAST OF THE ROCKIES. Reviewed by *Bernard Gollop* 59

BIRDER'S GUIDE TO SOUTHEASTERN MANITOBA. Reviewed by *Frank Brazier* 62

PENGUINS. Reviewed by *Wilfred S. Richards* 63

THE GANNET. Reviewed by *Philip S. Taylor* 64



Spring at a prairie slough. *Lorne Scott*

2 Blue Jay



A TRIBUTE TO GARY W. SEIB

ORNE SCOTT, Box 995, Indian Head, Saskatchewan S0G 2K0.

With the publication of the December, 1980 issue of the *Blue Jay*, Gary Seib completed a four year stint as editor.

Gary devoted a great deal of his spare time and energy editing the *Blue Jay*. His friendly and helpful nature was a great attribute in the time-consuming and difficult process of publishing each issue.

He worked well with associate editors, editorial assistants, printers, photographers and, most important, authors to prepare the material for publication.

By choosing a new typeface, simplifying the layout and making other design changes, he made the *Blue Jay* easier and more enjoyable to read. Most of the issues he edited had had articles on conservation, land use and other environmental issues.

Gary has had a long association with the Saskatchewan Natural

History Society dating back to 1968, when he became Archives Coordinator. During the past 12 years he has served in a number of capacities including President and lay-out and design consultant for the *Blue Jay* prior to taking over as editor. He has also been involved in many conservation issues within the Society such as the grasslands park and a land use policy for Saskatchewan. Gary has agreed to remain active in the Society and take over as Chairman of the Grasslands Park Committee.

On behalf of the board of directors and members of the Saskatchewan Natural History Society, I would like to thank Gary Seib for his generous donation of knowledge, ability, energy and time to the arduous task of editing the last 16 issues of the *Blue Jay*.

Congratulations Gary on a job well done!

SKIPPERS AND BUTTERFLIES OF A DISJUNCT ASPEN PARKLAND AREA IN ALBERTA

NORBERT G. KONDLA, Parks Division, Alberta Recreation and Parks, Rimbey, Alberta T0C 2J0.

Accounts of butterfly faunas and habitat use of the Alberta aspen parkland are scarce. Case and Bird provide some information on the Peace River parkland⁵ and Thormin deals with the Beaverhill Lake area.²⁴ However, other accounts treat individual species (e.g. Bird³) or taxonomic matters (e.g. Ehrlich⁹) rather than the typical fauna of a given habitat. This paper reports on the most detailed study of a local aspen parkland butterfly fauna undertaken to date in Alberta.

The central aspen parkland section is a fairly distinctive zone in south-central Alberta. Two outliers of aspen parkland are present near Drumheller, on the Wintering Hills and on the Hand Hills. The Wintering Hills, an upland rising more than 120 m above the plains southwest of Drumheller, are a generally east-west oriented ridge, the northeastern escarpment of which supports a substantial area of aspen parkland which is separated by a distance of about 80 km from the central aspen parkland.

For this study, we selected a representative area of about 260 ha for collection and observation of butterflies. All habitats were intensively searched by the writer and S. Harris from 1976 to 1980 inclusive on 20 different days with a seasonal spread from 1 May to 3 September. Visits were timed to minimize the possibility of missing any species because of its flight period.

The study area was situated in 28-26-18-W4, about 11 km south of East Coulee, on the highest portion of the hills where elevation ranges from 945 m to 1037 m. Here the escarpment is dissected by ravines, with local relief varying from gently rolling to steeply sloping. Figure 1 shows the general appearance of the study area.

About 50% of the study area is covered by Aspen Poplar forest with a moderately well-developed low shrub understory of Rose and Buckbrush. The herbaceous component of the forests is rich and includes such species as Sprengel's Sedge, Wild



Figure 1. General view of the study area.

Vetch, Peavine, Canada Anemone, and Western Canada Violet.

About 30% of the study area consists of grassland, most of which was dominated by Rough Fescue prior to the era of intensive cattle grazing. Much of this grassland has been altered to the point where Porcupine Grass and June Grass are now dominant. Certain slopes with a south and west exposure support an open grass-forb vegetation typical of coulees in the region.

The remainder of the study area is occupied by shrublands and miscellaneous local vegetation types. Small stands of Hawthorn, Chokecherry, and Saskatoon are present, as are larger areas of Beaked Willow. Low shrub thickets of Buckbrush, Rose, and Gooseberry are prevalent. Miscellaneous vegetation types are Bearberry mats, White birch stand, and two small heepage areas.

The area is floristically interesting, especially from a biogeographic perspective. In a small area one can find such unlikely associates as Heart-leaved Arnica (a mountain species), White birch (a boreal forest species), and Pincushion Cactus (a prairie-badlands species).

Annotated List

In the following list the term spring refers to May and June while summer refers to July, August and the first few days of September. Butterfly phenology is described with terms like "early spring to mid-summer." Dates indicate days for which specimen records are available and are written in an abbreviated format (e.g. 29-7-78 means 29 July 1978). Most of the common names are from Cooper¹². Scientific names follow dos Santos⁷ except where more recent work indicates that a change is warranted.

Hesperiidae

TAWNY-EDGED SKIPPER (*Polites themistocles*) — a worn specimen was found 1-8-77 in low shrub habitat near aspen forest; early to mid-summer.

LONG DASH (*Polites mystic dacotah*) — uncommon in grassland; 13-7-79; flight period not known.

UNCAS SKIPPER (*Hesperia uncas uncas*) — one female was found 29-7-78 on a west-facing hillside in open Porcupine Grass-June Grass vegetation; flight period not known.

ASSINIBOIA SKIPPER (*Hesperia comma assiniboia*) — locally abundant 29-7-78, 20-8-79, 3-8-80; mid to late summer; this insect was easily observed on flowers of *Liatris punctata* (Blazing Star) and showed pronounced hilltopping behavior; up to 8 individuals would frequently engage in rapid, erratic flights in tightly spaced groups.

NEVADA SKIPPER (*Hesperia nevada*) — very locally distributed on hilltops and ridge crests with short grass; 23-6-79.

GARITA SKIPPER (*Oarisma garita*) — abundant in grasslands; 19-6-77, 13-7-79; late spring to mid-summer; more abundant in less heavily grazed grasslands.

ARCTIC SKIPPER (*Carterocephalos palaemon mandan*) — occasional in and near aspen forest; 19-6-77; mid to late spring.

COMMON CHECKERED SKIPPER (*Pyrgus communis communis*) — abundant in grassland and low shrub habitat; 3-9-78, 23-6-79, 13-7-79; late spring to late summer.

DREAMY DUSKY WING (*Erynnis icelus*) — occasional in and near aspen forest; 21-5-78, 23-6-79; mid to late spring.

PERSIUS DUSKY WING (*Erynnis persius*) — fairly common in grassland near aspen forest; 30-5-76, 21-5-78, 9-5-80, 18-5-80; early to late spring.

AFRANIUS DUSKY WING (*Erynnis afraninus*) — fairly common in grasslands; 29-7-78, 9-5-80, 11-5-80; flies in two broods, early to mid spring and mid to late summer.

NORTHERN CLOUDY WING (*Thorybes pylades*) — uncommon at the edge of aspen forest; 30-5-76, 23-6-79; mid to late spring.

SILVER-SPOTTED SKIPPER (*Epargyreus clarus clarus*) — occasional in clearings in aspen forest and along edges of forest; 23-5-76; mid to late spring.



Silver-spotted Skipper.

C. Wallis

along the Red Deer River.¹⁶ Hooper's use of the name Cypress Hills Old World Swallowtail is misleading.¹² The taxon *dodi* was first described from badlands and the greatest portion of its range comprises badlands/prairie habitats. Hence the name Badland Old World Swallowtail seems more appropriate.

CANADIAN TIGER SWALLOWTAIL (*Papilio glaucus canadensis*) — abundant in and along edges of aspen forest; most frequently seen patrolling the edge of the aspen forest at heights of 2 to 5 m; 30-5-76, 23-6-79; mid to late spring.



Canadian Tiger Swallowtail.

C. Wallis

Papilionidae

ZELICAON SWALLOWTAIL (*Papilio zelicaon nitra*) — Taxonomy follows Fisher¹¹; males of the black phenotype were found 8-5-77 and 23-6-79 on grassland hilltops; males and females of the more abundant yellow phenotype were also found hilltopping 1-5-77, 14-5-78, 29-7-78, 23-6-79, 9-5-80, 11-5-80; early spring to mid summer; this lengthy range of dates combined with the fresh condition of the 1978 record suggests either an extremely staggered emergence or a small second brood.

BADLANDS OLD WORLD SWALLOWTAIL (*Papilio machaon dodii*) — only found on a grassy hilltop; 23-6-79, 20-8-79, 9-5-80, 11-5-80, 18-5-80, 3-8-80. This interesting swallowtail was described in 1939 by J. McDunnough primarily on the basis of specimens collected

Pieridae

WESTERN CHECKERED WHITE (*Pieris occidentalis occidentalis*) — fairly abundant in all non-forest areas; frequently seen hilltopping; the spring brood is dramatically smaller and darker than later broods; 1-5-77, 6-5-78, 3-9-78, 23-6-79, 20-8-79, 4-8-80; early spring to late summer in multiple broods.

CABBAGE BUTTERFLY (*Pieris rapae*) — occasional in open areas; 1-5-78, 3-9-78, 2-9-79, 9-5-80; early spring to late summer.

YELLOW ALFALFA BUTTERFLY (*Colias philodice eriphyle*) — abundant in all non-forested areas; albinistic females were found fairly frequently; 30-5-76, 23-5-77, 1-8-77, 16-8-77, 29-7-78, 3-9-78, 20-8-79, 2-9-79, 18-5-80; early spring to late summer.

LEXANDRA SULPHUR (*Colias alexandra alexandra*) — fairly abundant in native grasslands; 29-7-78, 23-6-79, 20-8-79, 18-5-80; mid spring to late summer.

All females found to date have been albinistic, a situation that appears to be normal for Alberta populations of this taxon. Ferris assigned Alberta prairie material to subspecies *astraea*¹⁰ but since then research has shown the presence of pure yellow populations in the prairie region of Alberta. The name used here for these small, yellow prairie insects is used provisionally as the most logical available name. In fact there is no published research to show that these populations are the same as the southern *C. a. alexandra*. Further study may even show that these populations represent a distinct species. This insect was not reported from the prairies of southern Saskatchewan by Hooper¹² although it probably occurs there. Here is an opportunity for naturalists in the prairies of southern Saskatchewan to provide specimens for taxonomic and biogeographic study. [There are two known specimens for southern Saskatchewan, both from the Cypress Hills. One was collected several years ago by Donald Hooper, the other in July 1977 by W. Harris and S. Lamont. — Editors]

LYMPIA MARBLE (*Euchloe olympia*) — only one specimen found on 18-5-80; the most northwesterly reported locality for this species in North America.

caenidae

ORAL HAIRSTREAK (*Harknessia titus immaculosus*) — males were found hilltopping on 29-7-78 and 20-8-79; mid to late summer.

OCKY MOUNTAIN STRIPED HAIRSTREAK (*Satyrus liparops aliparops*) — this is an inconspicuous and apparently uncommon butterfly in Alberta; one female was found 16-7-77, perched on a Buckbrush leaf at the edge of aspen forest. The subspecies *fletcheri*, characterized by large orange patches on the dorsal

forewing, occurs only about 100 km to the north at Buffalo Lake. When the zone of intergradation between *fletcheri* and *aliparops* is documented in this region, it may well be a very narrow zone similar to the situation reported by Clench for two other subspecies of the Striped Hairstreak in the southeastern USA.⁶

BROWN ELFIN (*Callophrys augustinus*) — very locally distributed; found only in a Bearberry patch at the top of the escarpment; 1-5-77, 6-5-78; early to mid spring; insufficient voucher material is available to assign a subspecies name with confidence; geographic character variation of this species in Alberta needs to be investigated.

GRAY HAIRSTREAK (*Strymon melinus*) — only one specimen found on 11-5-80.

PURPLISH COPPER (*Epidemia helloides*) — found at a seepage area on 23-6-79, 2-9-79; late spring to late summer.

MELISSA BLUE (*Lycaeides melissa melissa*) — uncommon in dry grassland; 23-6-79, 2-9-79, 18-5-80, 4-8-80; mid spring to late summer.

GREENISH BLUE (*Plebejus saepiolus amica*) — fairly common in grassland and low shrub areas; 23-5-76, 4-6-77, 18-5-80; mid to late spring.

ACMON BLUE (*Plebejus acmon lutzii*) — very local in dry grassland with bare soil and umbrellaplant (*Eriogonum flavum*); 23-6-79.

RUSTIC ARCTIC BLUE (*Agriades glandon rustica*) — locally abundant in dry grassland; fond of nectaring at flowers of Silverberry (*Elaeagnus comutata*); 23-6-79, 2-9-79; this late record plus another from Rumsey in August 1979 suggests a small second brood, apparently an unreported phenomenon.

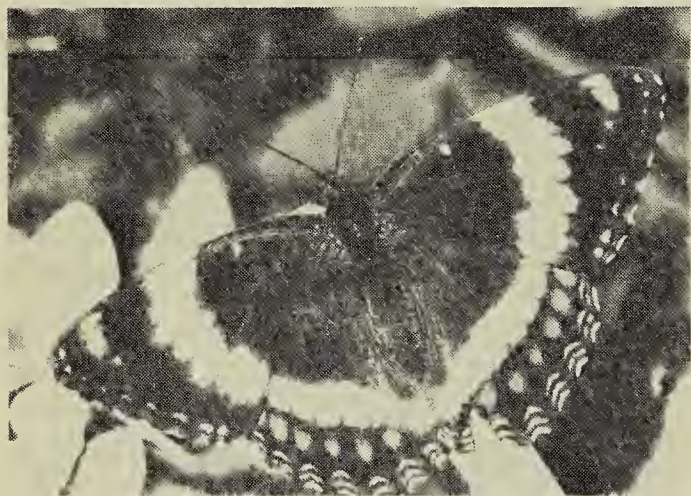
WESTERN-TAILED BLUE (*Everes amyn-tula albrighti*) — fairly common in and near aspen forest; 23-5-76, 30-5-76, 19-6-77; mid to late spring.

SILVERY BLUE (*Glaucopsyche lygdamus couperi*) — common in grassland and low shrub habitats; 23-5-76, 30-5-76, 1-5-77, 8-5-77, 23-5-77, 4-6-77, 14-5-78, 9-5-80, 11-5-80, 18-5-80; early to mid spring.

SPRING AZURE (*Celastrina argiolus lucia*) — occasional in clearings, edges of forest, and more open portions of the aspen forests; 1-5-77; early to mid spring.

Nymphalidae

WHITE ADMIRAL (*Limenitis arthemis rubrofasciata*) — occasional in aspen forest, clearings, and tall shrub thickets; 16-7-77, 13-7-79; late spring to mid-summer.



White Admiral.

C. Wallis

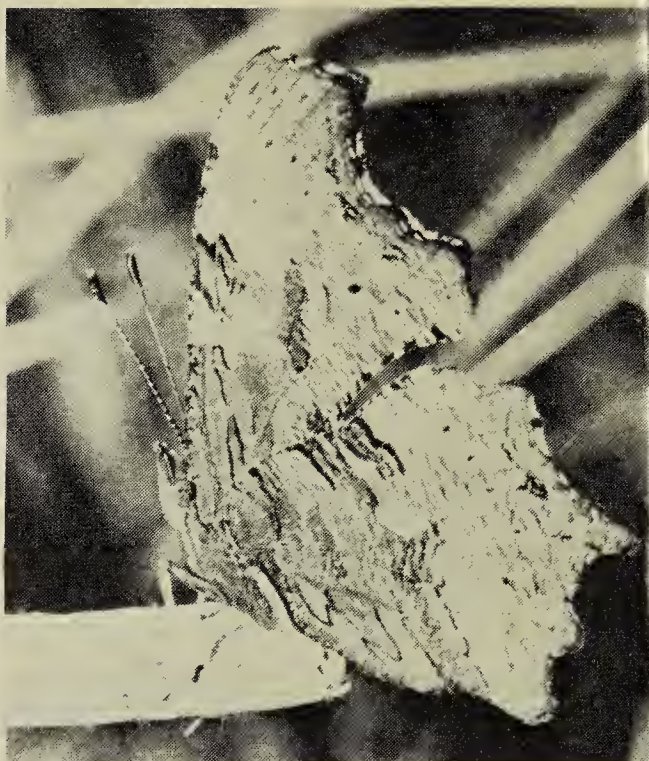
RED ADMIRAL (*Vanessa atalanta rubria*) — occasional in or near forest and tall shrub habitat; 19-6-77; flight period not known.

PAINTED LADY (*Cynthia cardui*) — occasional in most habitats and sometimes abundant on hilltops; late one afternoon about 50 to 60 males and females were found on a 50 m by 20 m section of grassy hilltop; 23-6-79, 20-8-79; only found in 1979, a year in which the species was generally abundant in southern Alberta.

MILBERT'S TORTOISE SHELL (*Nymphalis milberti furcillata*) — occasionally seen in all habitats; 1-5-77, 19-6-77, 13-5-79; flight period not clear.

MOURNING CLOAK (*Nymphalis antiopa antiopa*) — occasional in aspen forest and tall shrub habitat; worn, overwintered individuals were frequently seen in early spring while fresh adults were seen from mid-summer to late summer; 3-9-78.

SATYR ANGLE WING (*Polygonia satyrus*) — uncommon in aspen forest; 8-5-77,



Satyr Angle Wing.

C. Wallis

23-5-77, 11-5-80; previous literature referred Alberta material to the subspecies *satyrus* but dos Passos referred Alberta populations to *neomarsyas*; this situation needs further study.

GRAY COMMA (*Polygonia progne*) — found in aspen forest on 13-5-79 and 3-7-79; the latter record is of the distinctive summer form, *l-argenteum*.

PEARL CRESCENT (*Phyciodes tharos*) — abundant in grassland and low shrub areas; mid spring to mid-summer; 19-6-77, 16-7-77, 29-7-78, 18-5-80.

SILVER-BORDERED FRITILLARY (*Boloria selene*) — uncommon and local in or near sedge-rich seepage meadows; 13-7-79.



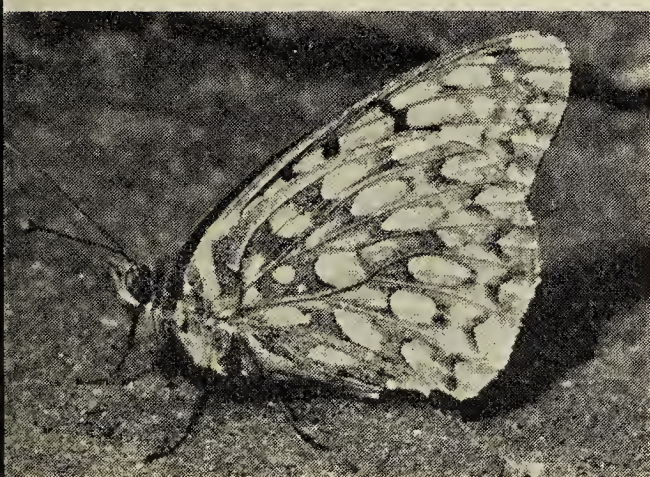
Silver-bordered Fritillary.

C. Wallis

Meadow Fritillary (*Boloria bellona jenistai*) — abundant in rich grassland and low shrub areas; mid spring to mid-summer, in at least two broods; 23-5-76, 30-5-76, 23-5-77, 4-6-77, 16-7-77, 21-5-78, 29-7-78, 18-5-80.

Edward's Fritillary (*Speyeria edwardsii*) — known only from one fresh male on 30-5-76 at the edge of aspen forest; an exceptionally early record for this uncommon but distinctive species.

Callippe Fritillary (*Speyeria callippe calgariana*) — locally abundant in grassland, especially on hilltops; late spring to mid-summer; 19-6-77, 29-7-78, 23-6-79, 13-7-79.



Callippe Fritillary.

C. Wallis

Atlantis Fritillary (*Speyeria atlantis*) — very abundant in open habitats; late spring to mid-summer; 19-6-77, 16-7-77, 13-7-79; although typically variable, this population is predominantly of the darker *beani* phenotype rather than the paler *helena* phenotype.

Mormonia Fritillary (*Speyeria mormonia eurynome*) — abundant in most open areas; late spring to mid-summer; 16-7-77, 29-7-78.

Great Spangled Fritillary (*Speyeria cybele pseudocarpenteri*) — very abundant, especially at the edges of aspen forest; females were frequently noted well within the woods; early to mid-summer; 16-7-77, 29-7-78, 13-7-79, 4-8-80.

Aphrodite Fritillary (*Speyeria aphrodite*) — very abundant in open

areas; early to late summer; 16-7-77, 29-7-78, 3-9-78, 20-8-79, 2-9-79, 3-8-80, 4-8-80; Kondla has identified the need for research to clarify variation at the subspecies level in Alberta.¹³

Variegated Fritillary (*Euptoieta claudia*) — one female was found hilltopping on 20-8-79.

Satyridae

Ringlet (*Coenonympha inornata benjamini*) — abundant in richer grasslands and low shrub habitats; mid-spring to early summer; 23-5-76, 30-5-76, 23-5-77, 4-6-77, 23-6-79, 18-5-80.

Riding's Satyr (*Neominois ridingsii ridingsii*) — rare on grassy slope with considerable proportion of bare ground; 13-7-79.

Common Wood Nymph (*Cercyonis pegala ino*) — abundant in richer grassland and low shrub habitats; early to late summer; 16-7-77, 1-8-77, 29-7-78, 13-7-79, 4-8-80.

Varuna Arctic (*Oeneis uhleri varuna*) — fairly abundant in grasslands; early to late spring; 30-5-76, 8-5-77, 23-5-77, 4-6-77, 23-6-79, 9-5-80, 11-5-80, 18-5-80.

Alberta Arctic (*Oeneis alberta alberta*) — locally abundant in grasslands; early to mid spring; 1-5-77, 8-5-77, 14-5-78, 21-5-78, 13-5-79, 9-5-80, 11-5-80, 18-5-80; emergence varies by 2 to 3 weeks depending on spring weather; in late springs the main flight period of the Alberta Arctic overlaps that of the Varuna Arctic.

Red-Disked Alpine (*Erebia discoaldis mcdunnoughi*) — fairly common but locally distributed in fescue grasslands; early to mid-spring; 1-5-77, 14-5-78, 11-5-80.

Common Alpine (*Erebia epipsodea*) — fairly common in richer grasslands and low shrub areas; mid-spring to early summer; 4-6-77, 23-6-79; Ehrlich shows the study area to be in a zone of intergradation between *E. e. freemani* and *E. e. epipsodea*.⁹ He also indicates that no abrupt boundaries exist between the subspecies and that considerable variation within a population masks geographic

variation unless longer series of specimens are available for study. When more material is available this population will likely be assignable to the subspecies *freemani*.

Discussion

A total of 57 species have been found, 55 of which are probably resident in the study area. The fauna is comprised of: Hesperidae 13 (23%), Papilionidae 3 (5%), Pieridae 5 (8%), Lycaenidae 12 (21%), Nymphalidae 17 (29%), Satyridae 7 (12%). Except for a substantially enriched Hesperidae fauna and depauperate Pieridae fauna, this is representative of the situation in Alberta as a whole. As in most prairie areas, the skipper fauna here is rich in comparison to the boreal and cordilleran regions of the province. For a non-cordilleran area, the *Speyeria* fauna is surprisingly rich, in both number and abundance of species. The violet flora (food plants of the greater fritillaries) is equally rich, including *Viola adunca*, *V. nephrophylla*, *V. nuttallii*, *V. pedatifida*, *V. rugulosa*.

The Satyridae are predominantly spring fliers here. The few Pieridae of the study area are found throughout the spring and summer. Most of the Lycaenidae, especially the blues, are spring fliers although the hairstreaks are distinctly summer fliers. The Nymphalidae fly most abundantly from late spring to midsummer. Skippers include spring flying species with legumes and poplars for larval food plants, and summer flying species with grasses for larval food plants. Overall abundance and diversity was greatest in the spring in the grassland and in summer in shrubland and woodland habitats.

Butterfly phenology data does not show a pronounced short term peak in species diversity as other areas in

Alberta, i.e. Calgary², Plateau Mtn. Kananaskis Provincial Park¹⁴, Standard¹³. In the present study area species diversity rises rapidly to almost maximum by mid spring with a poorly defined peak in late spring and then a slight drop followed by high diversity until midsummer. Only in late summer is there a substantial reduction in species diversity.

According to the account of mate locating behavior given by Scott, the two major methods used to locate mates are: perching behavior (male rest at characteristic sites and investigate passing objects by flying out at them) and patrolling behavior (males fly almost continuously in search of females).¹⁸

Information provided by Scott¹⁹ and personal observations show that the fauna of the study area is made up of 31 species which predominantly use patrolling behavior and 24 species which predominantly use perching behavior to locate mates. The Hesperidae are predominantly perchers while the Papilionidae are inveterate patrollers. Some species peculiarities that were noted are: the Assiniboia Skipper and Nevada Skipper characteristically perch on hill and ridge tops; the Zelicion Swallowtail and Badlands Old World Swallowtail patrol less than 2 metres above the ground on grassy hilltops while the Tiger Swallowtail patrol mostly at heights of 2-5 metres at the edge of aspen forest. The Pieridae are all patrollers, as are most of the Lycaenidae, although the hairstreaks and coppers are perchers.

Most of the Nymphalidae are patrollers, especially the greater fritillaries which are very active. The Satyridae are interesting because the early flying species use perching behavior supplemented by patrolling while the later flying species are patrollers. The visibility of individual butterflies is correlated with the

amount of time they spend flying. The fact that patrolling males spend more time flying than do perching males has a definite influence on population estimates based on visual estimates of flying butterflies.

Since the study area is the highest hill in the region with many local, smaller scale topographic highs, this discussion would not be complete without treating the phenomenon of hilltopping. In the broadest sense the term refers to the congregation of insects on various kinds of topographic high points in the landscape.²⁰ The topic has generated substantial discussion and Shields presents a comprehensive literature review.²¹

Many explanations or theories have been advanced but it is overly simplistic to suggest a single best explanation for the phenomenon. In the more narrow, behavioral definition of hilltopping¹⁷ it seems most widely accepted that hilltops are meeting places for the sexes to mate. In the broader definition there are most likely a variety of factors and suitable explanations to suit the variety of species, ecological circumstances, and geographic locations involved.

Twelve of the species found in the present study area were very noticeably restricted to or were more abundant on local topographic highs. In two cases, the Brown Elfin and Common Blue, the restricted distribution of the larval food plants is clearly the causative factor. Such is not the case for the Melissa Blue or the grass feeders (Assiniboia Skipper, Nevada Skipper, Alberta Arctic). Adults of the Assiniboia Skipper are strongly attracted to flowers of Blazing Star (*Liatris punctata*) while adults of the Nevada Skipper were seen to show a similar attraction to flowers of Prairie Roundsel (*Senecio canus*) and a small yellow mustard. Thus, these insects may be attracted to nectar



Blazing Star.

Bernard de Vries.

sources abundant on hilltops rather than the hilltop situation.

Alberta Arctic behavior fits the mate-locating definition of hilltopping quite nicely. Males perch on the ridge top, periodically fluttering up several feet, apparently surveying the slope below them for females, and dashing downslope to investigate butterflies at lower elevations. This behavior has been previously described in *Oeneis uhleri uhleri* in Colorado.¹⁵

The aggressive, and more or less continuous hilltop flights of the Zeligon Swallowtail, Badlands Old World Swallowtail, Western Checkered White, Coral Hairstreak, Painted Lady, and Callippe Fritillary are also good examples of mate-locating hilltopping behavior.

The study area has a variety of butterfly habitats due to differing slope exposures, groundwater conditions, and grazing history. The grassland and shrubland habitats are much more productive for butterflies than the aspen forest. Naturalists visiting areas like this will find the shrubby edges of aspen forest and grassy hilltops to be superior places

to observe a variety of butterflies and interesting behavior.

- ¹BIRD, C. D. 1975. A calendar of the butterflies and skippers of the alpine area of Plateau Mountain. *Alberta Naturalist* 5:26-28.
- ²BIRD, C. D. 1975. A revised calendar of the butterflies and skippers of Calgary. *Calgary Field Naturalist* 6:312-314.
- ³BIRD, C. D. 1979. The Question Mark — another "eastern" butterfly new to Alberta. *Alberta Naturalist* 9:66.
- ⁴BOWMAN, K. 1944. Additions and corrections to checklist of the macrolepidoptera of Alberta. *Canadian Entomologist* 76:191-192.
- ⁵CASE, J. W. and C. D. BIRD. 1977. Butterflies and skippers of west-central Alberta. *Blue Jay* 35:208-219.
- ⁶CLENCH, H. K. 1972. The boundary between *Satyrium liparops* and its subspecies *strigosum* (Lepidoptera: Lycaenidae). *Annals of the Carnegie Museum* 44:11-24.
- ⁷dos PASSOS, C. F. 1964. A Synonymic list of the Nearctic Rhopalocera. *Lepidopterists' Society Memoir* 1. 145 pp.
- ⁸dos PASSOS, C. F. 1968. A name for *Polygonia satyrus marsyas* (Lepidoptera: Nymphalidae). *Transactions of the American Entomological Society* 95:153-159.
- ⁹EHRLICH, P. R. 1955. The distribution and subspeciation of *Erebia epipsodea* Butler (Lepidoptera: Satyridae). *University of Kansas Science Bulletin* 37:175-194.
- ¹⁰FERRIS, C. D. 1973. A revision of the *Colias alexandra* complex (Pieridae) aided by ultraviolet reflectance photography with designation of a new subspecies. *Journal of the Lepidopterists' Society* 27:57-73.
- ¹¹FISHER, M. S. 1977. The taxonomy and identity of *Papilio nitra* W. H. Edwards in Colorado (Papilionidae). *Bulletin of the Allyn Museum* 47:1-8.
- ¹²HOOPER, R. R. 1973. The butterflies of Saskatchewan. *Saskatchewan Museum of Natural History*. 216 pp.
- ¹³KONDLA, N. G. 1979. Skippers and butterflies of a prairie farm. *Alberta Naturalist* 9:71-75.
- ¹⁴KONDLA, N. G. and C. D. BIRD. 1979. The skippers and butterflies of Kananaskis Provincial Park, Alberta. *Blue Jay* 37:73-85.
- ¹⁵MASTERS, J. H. and J. T. SORENSON. 1969. Field observations on forest *Oeneis* (Satyridae). *Journal of the Lepidopterists' Society* 23:155-161.
- ¹⁶McDUNNOUGH, J. H. 1939. A new race of *Papilio* belonging to the *machaon* complex. *Canadian Entomologist* 71:216-217.
- ¹⁷SCOTT, J. A. 1968. Hilltopping as a mating mechanism to aid the survival of low density species. *Journal of Research on the Lepidoptera* 7:191-204.
- ¹⁸SCOTT, J. A. 1974. Mate locating behavior of butterflies. *American Midland Naturalist* 91:103-117.
- ¹⁹SCOTT, J. A. 1975. Mate locating behavior of western North American butterflies. *Journal of Research on the Lepidoptera* 14:1-40.
- ²⁰SHEPARD, J. H. 1966. A study of the hilltopping behavior of *Pieris occidentalis* Reakirt (Lepidoptera: Pieridae). *Pan-Pacific Entomologist* 42:287-291.
- ²¹SHIELDS, O. 1967. Hilltopping: An ecological study of summit congregation behavior of butterflies on a southern California hill. *Journal of Research on the Lepidoptera* 6:69-178.
- ²²STALKER, A. M. 1973. Surficial Geology of the Drumheller Area, Alberta. *Geological Survey of Canada Memoir* 370. 122 pp.
- ²³TAVERNER, P. A. 1919. The birds of the Red Deer River, Alberta. *Auk* 36:1-21, 248-265.
- ²⁴THORMIN, T. W. 1977. The butterflies of Beaverhill Lake. *Edmonton Naturalist* 5:160-163.

9th ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT — 1980

Compiled by MARY I. HOUSTON, 863 University Drive, Saskatoon,
Saskatchewan S7N 0J8.

During the 1980 Christmas Bird Count Period (20 December 1980 to 4 January 1981), 71 species, plus one subspecies, were recorded on Count Days, with another six species recorded during Count Period but not seen on Count Days. Counters contributed 3 reports.

New species not previously reported to the *Blue Jay* during Count Period included three Wild Turkeys seen at Biggar, and two Red-tailed Hawks seen by Wayne Renaud and Guy Wapple at Squaw Rapids. This brings the all-time total to 130 species (plus two subspecies) and six additional species seen during count periods.

In fact, there was a previous Saskatchewan sighting of a Red-tailed Hawk during Count Period, not submitted to the *Blue Jay*, yet listed in *American Birds* 25: 153 & 593, 1971. This immature male at Regina, which followed Bob Rafuse to approach within 15 feet on 28 December 1970, may have been an escaped pet.

The Snowshoe Hare population at Squaw Rapids was very high. Wayne Harris notes, "Over the course of the year we saw at least 50 kill sites of hares. This factor is undoubtedly responsible for the phenomenal Snowhawk concentration (16) and the presence of the Red-tailed Hawks". Previously, five was the high count for Snowhawks, except in 1979, when there were 13 at Squaw Rapids.

The Cardinal at Saskatoon was a second Christmas Bird Count record

— the first having been reported from Craven on 29 December 1960.

The Togo group are still hauling in sunflower seeds and sent a detailed account of the species seen over the period at their feeders and in the neighbourhood. Unfortunately, their early November heavy influx of Evening Grosbeaks had disappeared by Christmas.

Twelve observers participated in the "Fort Walsh Classic", and tallied 37 species plus one subspecies — the highest count for the province. Three of the observers were local ranchers with bird feeders; most of the others came from considerable distances to take part.

Glaucous Gulls seem to be becoming quite regular — 3 were seen at Gardiner Dam in 1975, 1 at Gardiner Dam in 1976, 1 at Cold River in 1977, none in 1978, and 3 at Gardiner Dam in 1979. This year individuals were seen at both Gardiner Dam and Regina, during the Count Period.

Mrs. Betty Hubbard at Grenfell, noted that while there had been many species of birds around early in December there was a remarkable lack of them during count period. On 27 December, one unidentified bird was seen in a 1.5-hour drive; on 29 December in a 1.5-hour walk, one chickadee and sparrows were seen; and on another day's walk, no birds at all. "Where have they all vanished?"

Bohemian Waxwings were seen in only 16 of the 53 locations over the count time, and in all (except

Saskatoon with 4630) the numbers were low. This may reflect a shortage of food since the wild fruit crop, following the 1980 spring drought, was one of the poorest in memory, and even cultivated fruits like the mountain ash trees produced poorly.

Table 1 lists the locations of counts and participants; Table 2 gives the distances, time and weather; Table 3 shows numbers of those species seen in more than three localities either on

count day or during count period. Table 4 gives the numbers and locations of species seen in three or fewer localities.

Species seen during count period but not on count day are marked with a + before the number of individuals seen.

Information on area description for each locality, and dates of species seen during count period but not on count day, are available in the files.



Bohemian Waxwing.

Lawrence Bascha

Table 1 — CHRISTMAS BIRD COUNT PARTICIPANTS.

1. ASSINIBOIA. George Berjian, John Burgeson, Cecil T. Hayward (compiler), Alden Hoffos, Nelson Lamb, Roy Lamb, Don Lemond, Ted McMorrine, Ken Schuweiler, Mel Wenaus.
2. BATTLEFORDS. James Donovan (compiler), Christopher Donovan, Doug Collister, Barbara Collister, Paul Collister, Michael Collister.
3. BIGGAR. Harvey Renaud, Wayne Renaud, Guy Wapple (compiler), Marguerite Wapple, Robert Wapple.
4. BIG GULLY CREEK. Wayne Harris (compiler), Sheila Lamont.
5. BROADVIEW. a) Dave Chaskavich (compiler), Don Weidl. b) Doug Francis.
6. COLD RIVER. Peter Assmann (compiler), Dan Johns, Gordon Lambert.
7. DALMENY. Brian Sperling, Gilbert Sperling, Lorne Sperling, Lloyd Sperling (compiler).
8. DILKE. Margaret Belcher (compiler), Gloria, Knud and Michelle Mikkelsen.
9. EASTEND. Tom Donald, Jane Gollop, Mike Gollop (compiler), Jack Wilkinson.
10. EASTEND. Bart, Bruce and Henri Lebastard (compiler)
11. ENDEAVOUR. Norman Harris.
12. FORT QU'APPELLE. Fred Barker, Dudley and Irene Barnett, Ernie and Jeanette Biro, Manley Callin (compiler), Errol Cochrane, Ethel Cockwill, Bernie and Ethel deVries, June Dick, Doug Evans, David and Ron Hooper, Alice Laing, Alan and Ray Mlazgar, Dick Nevard, John Norman, Lorne and Shaun Rowell, Eileen Smith.
13. FORT WALSH. Bob and Dixie Black, Charles Harper, Wayne Harris, Linda Lahey, Sheila Lamont, G. Wilkes Parsonage, Wayne Renaud, Al Smith, Guy Wapple (compiler), Jack and Janet Wilkinson.
14. FRONTIER. Jack Wilkinson, Janet Wilkinson (compiler).
15. GARDINER DAM. Wayne Harris, Sheila Lamont, Wayne Renaud, Guy Wapple (compiler), Robert Wapple (and Bob Godwin, Dec. 20).
16. GOODSOIL. Catherine Morton (compiler), David Morton, Richard Morton.
17. GOVENLOCK. Wayne Harris (compiler), Sheila Lamont, Wayne Renaud, Guy Wapple.
18. GRENFELL. Betty Hubbard (compiler), John Hubbard.
19. HAFFORD. Terry Toews, Don Weidl (compiler).
20. HARRIS. Guy Wapple (compiler), Robert Wapple.
21. HUMBOLDT. Ed Brockmeyer (compiler), Dwayne Saretsky.
22. INDIAN HEAD. Cec and Betty Ashmore, Marg Barclay, Marg and Vic Beaulieu, Yvonne Brown, Richard Escott, Joan Halford, Gordon Howe, Helen King, Rose, Roy and Margaret McLaughlin, Lloyd and Muriel Peterson, Joan and Lorne Scott, Fred, Mary and Ken Skinner, Andrea, Donna, Dennis, Orland and Ron Thompson, Charlie Thompson, Mary Skinner (compiler).
23. KELVINGTON. Chet Sloan, Dianne Sloan (compiler), Marguerite Sloan, Graham and Mavis Sloan.
24. KENASTON. Bill, Doug, JoAnn, Lori, and Marg Beckie, Lawrence Beckie (compiler).
25. KUTAWAGAN LAKE. Wayne Harris (compiler), Sheila Lamont.
26. LAST MOUNTAIN LAKE. Wayne Harris (compiler), Sheila Lamont.
27. LEADER. Daisy D. Meyers.
28. LOON LAKE. Frank Scott, Penny Scott (compiler).
29. LUSELAND. Kerry Finley (compiler), Kim Finley, Estelle Martfeld, Dan Wardley.
30. MACDOWELL. Muriel Carlson (compiler), Pat Meadley, Barbara Stoner.
31. MAIDSTONE BRIDGE. Wayne Harris (compiler), Dan Lamont, Sheila Lamont, Tom Lamont.

32. MOOSE JAW. Jeanette Fjetland, Doug Francis, Al Gurnsey, Ruth Hilling, Edith Kern, John Kern, Pat Kern, Cy and Leith Knight, Bernice Lewis, Moray Lewis, Hugh and Connie McIntyre, Molly Ritchie, Gillian Thomson, Hugh and Wilma Young, Gus Zado, Leith Knight (compiler).
33. PRINCE ALBERT. A. O. Aschim, Kevin Aschim (compiler), Kim Hruska, Dr. Martinson.
34. PRINCE ALBERT. Wayne Harris (compiler), Sheila Lamont, Richard Miller.
35. PRINCE ALBERT. Murray J. Kyle.
36. PRINCE ALBERT NATIONAL PARK. Joseph Benge, Ray Brenaman, Suzanne Henry (compiler), Shelley Ross, Mervyn Syroteuk.
37. RAYMORE. Greta Harris, Wayne Harris (compiler), Sheila Lamont.
38. REGINA. Chris Adam, Jessie Bailey, Margaret Belcher, Tom Beveridge, Frank Brazier, Elmer Fox, Jim Hines, Jim Jowsey, Greg Kraetzig, Robert Kreba (compiler), Eric Lang, Tony Lang, Bob Luterbach, Brad Muir, Diane Secoy, Allan Smith, Mary Sykes, Frank Switzer, Ian Switzer, Dorothy Tegart, Christopher Wilhelm, J. Wilhelm.
39. ST. WALBURG. Nigel Caulkett.
40. SASKATOON. Mark Abley, Jean Anderson, Juhachi Asai, Bob and Joyce Besant, Ron and Muriel Bremmer, Pern Cordery, Chris Escott, Cliff, Doug and Trevor Findlay, Arthur and Edward Fredeen, Geoff Galloway, Mary Gilliland, Bernie and Madeleine Gollop, Jack Greaves, Bruce Hanbidge, C. J. David, Mary and Stuart Houston (compiler), Ron Jensen, David Lane, Heywood MacDonnell, Blake Maybank, Don and Jo McRobbie, Bob, Lisa and Marion Moody, Sean Morrissey, Betty and Jim Mundy, Michael Narun, Dan Neves, Bill Nickel, Jim and Pat O'Neil, John Polson, Wayne Renaud, Adam Schmidt, Guy Wapple, David Wright.
41. SCOTT. Guy Wapple (compiler), Robert Wapple.
42. SKULL CREEK. Jim Bennetto (compiler), Marjorie Mann, Patty Mann, Marina Schuler, Ray Schuler.



Sharp-tailed Grouse.

Lorne Scott

43. SOMME. Edwin Billeter, David Black, Florence Chase, Donald Hooper (compiler).
44. SPIRIT LAKE. Bill and Joyce Anaka.
45. SPRING VALLEY. Allan Bogdan, Flossie Bogdan (compiler), Larry Bogdan, Nick Bogdan, Dean Golan.
46. SQUAW RAPIDS. Wayne Harris (compiler), Sheila Lamont, Wayne Renaud, Guy Wapple.
47. TOGO. Bert and Doris Franklin, Phil and Jean Hern, Vic and Olga Hilderman, Bill and Vi Holliday, Cusie and Wanda May (compiler and seed hauler!), Arch and Elizabeth Parker, Chas. and June Ross, Dick and Mary Smith, Howard and Donelda Wilson, Orville and Elaine Wilson.
48. WEBB. Stan Greenwood, Brian Keating (compiler).
49. WHITE BEAR. Sig Jordheim.
50. WHITEBEECH. Ida Wotherspoon, Lindsay Wotherspoon (compiler).
51. WOLSELEY. Dale Chay, Donald Hayward (compiler).
52. WYNYARD. John Gulley (compiler), Sherry Gulley.

Table 2. CHRISTMAS COUNT COVERAGE AND WEATHER CONDITIONS.

LOCALITY	COVERAGE AND CONDITIONS		BY AUTOMOBILE		ON FOOT		KILOMETERS SKIING	KILOMETERS BY SNOWMOBILE	HOURS SKIING AND BY SNOWMOBILE	HOURS WATCHING FEEDERS	TEMPERATURE RANGE (°C)	WIND SPEED (KM/HR)	SNOW DEPTH (CM)	SKY
			KILOMETERS	HOURS	KILOMETERS	HOURS								
SINIBOIA			144	8		2					-7/ +4	16-24	0	partly cloudy
TTLEFOROS			112	4	15	4	2		1		-15/-10	5-20	25	partly cloudy
GGAR			219	7	14	7				2	-35/-23	10-30	20	clear, snow
G GULLY CREEK			90	4	5	3					+15/ +9	5-20	8	fog, clearing
DAOVIEU (a)			150	5	1	½					-30	10	2	clear
DAOVIEU (b)			54	6	2	1				2	-10/-12	0-10	1	cloudy, clearing
D RIVER			80	6	3	1					-17/-12	6	10	overcast, clearing
LMENY					58	25					-8/ -5	10-12	8	cloudy, clearing
KE			80	3	8	3					-9/-12	light	0	clear
STENO			213	7	20	10					-1/ +6	15-30	0	cloudy
STENO			68	4	6	3					+3	light	0	clear
DEAVOUR					2	3					-25/-18	0- 5	25	overcast
RT QU'APPELLE			400	18						4	-4/ +1	4- 7	tr	clear, cloudy
RT WALSH, CYPRESS HILLS			125	19	48	24				6	-15/ -5	0-10	3	overcast
ONTIER			100	4	3	1					-10/ -5	0-10	1	clear
ROINER DAM			280	11	13	6					-20/-15	5-20	8	overcast, light snow
OSOIL			30	3	2	1					-15	5-10	13	partly cloudy
ENLOCK			130	9	11	7					-15/-10	5-15	1	overcast, light snow
NFELL			29	1	3	2					-6	10-15	6	?
FORO			62	2	1	1					-23/-20	15-20	3	overcast, light snow
RIS			152	6	10	4					-10/ +2	0	6	mostly cloudy
BOLOT			5	1	12	5					-7/ -4	4-10	1	mostly cloudy
IAN HEAO			25	3	20	8				4	-23/-15	0- 5	3	overcast, light snow
VINGTON			30	4						6	-32/-28	40	13	overcast, light snow
ASTON			50	3	6	3					+7/+10	24-32	10	mostly cloudy
AWAGAN LAKE			110	4	1	1					-20/-26	5-10	6	clear
T MOUNTAIN LAKE			120	4	1	1					-34/-25	30-55	9	clear, partly cloudy
OER					4	2					-5/ 0	0	1	clear
N LAKE			45	1	2	1				5	-5/ 0	12-15	3	clear
ELAND			170	4	12	4				3	-12/ -9	0-15	25	mostly cloudy
OOWALL			100	1			12		4		-8/ -2	0	25	clear
OSTONE BRIDGE			120	5	10	5					-15/-18	15-35	12	overcast
SE JAW			208	7	9	5				4	-12/ -4	3-16	8	overcast, clearing
NCE ALBERT			90	3	5	3	15		2	2	-12/-15	0-10	18	overcast
NCE ALBERT			140	7	5	3					-15/-11	5-15	16	clear, clouding over
NCE ALBERT			64	3	3	1				1	-11/-10	14-22	17	partly cloudy, snow
NCE ALBERT NATL. PARK			200	6	8	4				2	-25/-19	0-10	30	clear
MORE			160	6	10	5				2	-16/-21	5-25	14	clear, clouding over
INA			568	19	43	16				1	-15/ -7	32-63	4	overcast, light snow
WALBURG			126	4	1	1					-27/-24	15-20	12	mostly cloudy
KATOON			434	42	114	46				19	-16/ -8	0-20	5	overcast
TT			208	7	6	3					-4/ +2	5-20	3	cloudy, clearing
LL CREEK					3	2					+6	0-10	0	clear
ME			90	10	5	3				3	-12/ +2	5-20	12	clear, clouding over
RIT LAKE			85	5	6	2				2	-16/-19	5-15	10	overcast
ING VALLEY			110	4	22	6					-7/ +4	8-12	1	cloudy
AW RAPIOS			70	9	21	14					-10/ -7	5-40	22	overcast
O										54	?	?	4	?
B			160	7							-6/-12	?	?	overcast, fog
TE BEAR			32	1	40	17					0/ +7	0-15	5	partly cloudy
TEBEECH					3	3		8	1	6	+5/ +7	10-30	22	clear, clouding over
SELEY			48	2	4	2					-8	20	1	overcast
YARO			80	3							-14/-11	10-15	?	partly cloudy

Table 3-1. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES	LOCALITY										
	ASSINIBOIA January 4	BATTLEFORDS December 26	BIGGAR December 24	BIG GULLY CREEK January 1	BROADVIEW (a) December 24	BROADVIEW (b) January 1	COLD RIVER December 28	DALMENY December 31	DILKE December 28	EASTEND December 29	EASTEND January 2
Mallard						2	62				
Common Goldeneye							5				
Common Merganser							5				
Goshawk				1			1			+1	
Rough-legged Hawk										+2	
Golden Eagle											
Bald Eagle						+1	1				
Merlin		1	+1			+1	1				
Ruffed Grouse		4		1		2	3				
Sharp-tailed Grouse	13	2	106	11	87		92	41			5
Ring-necked Pheasant	9									+1	3
Gray Partridge			82			+10		+10	3		5
Rock Dove		26	112	2	120		10	20	54	11	43
Great Horned Owl	2		1			1		1	1	1	1
Snowy Owl	3	1	+1		1			4	+1		2
Short-eared Owl										1	
Common Flicker										1	1
Pileated Woodpecker				1							
Hairy Woodpecker		1	1	3		4		3		1	
Downy Woodpecker		1	1			5	1			1	2
N Three-toed Woodpecker											
Horned Lark			243		18			5	+3	+25	2
Gray Jay											
Blue Jay			+1			1	2			1	1
Black-billed Magpie	6	32	116	3	21	5	8	48	19	77	22
Common Raven							13				
Black-capped Chickadee		6	8	6	18	25	12	11	7	118	16
Boreal Chickadee				1			1				
White-breasted Nuthatch						5					
Red-breasted Nuthatch										9	
American Robin										2	
Bohemian Waxwing		114	1					2		2	
Cedar Waxwing											
Northern Shrike				1			3				
Starling			1								
House Sparrow	392	5	637	10	133	40		95	101	90	25
Evening Grosbeak			1		3	100					
Pine Grosbeak			4		31	30	9	7	3	10	8
Hoary Redpoll			3			11	1			2	
Common Redpoll	57		662	22	242	85	50	65	6	20	
White-winged Crossbill											
Dark-eyed Junco											
Tree Sparrow						1				3	
Snow Bunting	5		28		997	+5	284	+100	+20	2	
No. Species in Table 4	1	0	1	0	0	0	0	0	1	2	0
No. Count Day Species	9	11	18	12	11	15	20	12	9	20	14
No. Count Period Species	9	11	21	12	11	19	20	14	12	24	14
No. Count Day Individ.	488	193	2010	62	1671	316	564	302	196	419	136

Table 3-2. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

LOCALITY											SPECIES
ENDEAVOUR December 25	FORT QU'APPELLE December 29	FORT WALSH, CYPRESS HILLS December 21	FRONTIER January 2	GARDINER DAM December 22	GOODSOIL December 28	GOVENLOCK December 20	GRENFELL January 1	HAFFORD December 21	HARRIS December 19	HUMBOLDT December 31	
	125	9		202		2				+1	Mallard
				5	32						Common Goldeneye
				7							Common Merganser
1		1									Goshawk
	+1		+1								Rough-legged Hawk
		2	2			3					Golden Eagle
		+1		3							Bald Eagle
	+1	1	+1			1					Merlin
+1	5	2			5					4	Ruffed Grouse
32	+15	11	13	26	+60			17	132	+3	Sharp-tailed Grouse
		12	2	1		1					Ring-necked Pheasant
	+20	+9	+18	114		66			90		Gray Partridge
	86	11	8	83			12	70	142		Rock Dove
	+1	4	2	3		2			2	2	Great Horned Owl
+1	1		1	2	+1	3	1		3	+1	Snowy Owl
		1									Short-eared Owl
											Common Flicker
											Pileated Woodpecker
	6	6		+1	+1						Hairy Woodpecker
	8	12		2					1	2	Downy Woodpecker
		2									N Three-toed Woodpecker
	1	21	13	179		500					Horned Lark
					2						Gray Jay
+3	5	2			+2						Blue Jay
1	84	272	34	42	30	4	1	8	125	4	Black-billed Magpie
6					45			1			Common Raven
2	66	115		2			+1	7	8	8	Black-capped Chickadee
					2						Boreal Chickadee
	+1										White-breasted Nuthatch
		9									Red-breasted Nuthatch
	+1										American Robin
	+6	4		7							Bohemian Waxwing
											Cedar Waxwing
+1		1									Northern Shrike
			1						4		Starling
11	1381	104	400	282	+15	335	30	60	1101	7	House Sparrow
	36	1					1				Evening Grosbeak
19	50	10			+2			7			Pine Grosbeak
+1											Hoary Redpoll
	41	134	9	130		208			205	12	Common Redpoll
		48									White-winged Crossbill
	1	3									Dark-eyed Junco
		17									Tree Sparrow
75	50	9		1021	+100	285			86	+100	Snow Bunting
0	1	10	0	2	0	3	0	0	1	0	No. Species in Table 4
8	17	37	11	19	6	15	5	7	13	7	No. Count Day Species
13	25	40	14	21	13	15	6	7	13	11	No. Count Period Species
147	1947	884	485	2119	116	1415	45	170	1900	39	No. Count Day Indiv.

Table 3-3. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES	LOCALITY										
	INDIAN HEAD December 21	KELVINGTON December 22	KENASTON December 27	KUTAWAGAN LAKE December 23	LAST MOUNTAIN LAKE December 24	LEADER December 28	LOON LAKE December 25	LUSELAND December 26	MACDOWALL December 30	MAIDSTONE BRIDGE January 2	MOOSE JAW December 26
Mallard											
Common Goldeneye	+3										
Common Merganser											
Goshawk				1						1	
Rough-legged Hawk											
Golden Eagle					1			+1	1		
Bald Eagle	+1										
Merlin											+1
Ruffed Grouse	7								1	1	
Sharp-tailed Grouse	11	54	+7		23			5	1	31	+7
Ring-necked Pheasant	3					10					24
Gray Partridge	21	11	39	23	27	9		94	+2	+1	14
Rock Dove	25		14	4	4			59	17	4	148
Great Horned Owl	4		1		1				+1	1	2
Snowy Owl	3	1	+1	1	3			2	1	1	6
Short-eared Owl					2						2
Common Flicker											
Pileated Woodpecker									1		
Hairy Woodpecker	6	2					+1			1	2
Downy Woodpecker	6	1					2	1	+1	1	1
N Three-toed Woodpecker											
Horned Lark	+9		6	7	5			62			10
Gray Jay							3		1		
Blue Jay	2	+1	+1				+6	3	3	3	
Black-billed Magpie	37	4	7	26	39	32	+2	23	4	44	137
Common Raven		2					3		3	+1	
Black-capped Chickadee	31	10	2	1		2	6	6	12	9	25
Boreal Chickadee							2				
White-breasted Nuthatch	3										1
Red-breasted Nuthatch	4								1		4
American Robin											+1
Bohemian Waxwing								1			133
Cedar Waxwing											
Northern Shrike								1		1	
Starling			+10		1			+5			+59
House Sparrow	770	30	25	110	95	38	2	76		120	935
Evening Grosbeak	3	24								2	+1
Pine Grosbeak	2	7						1		3	21
Hoary Redpoll											
Common Redpoll	19		71	60	200			+30		25	25
White-winged Crossbill	4										
Dark-eyed Junco											1
Tree Sparrow							4	1			
Snow Bunting	45	700	200	50	7768		+20	210		105	100
No. Species in Table 4	2	0	1	0	0	1	0	0	0	0	1
No. Count Day Species	22	12	9	10	13	6	7	15	12	17	20
No. Count Period Species	25	13	14	10	13	6	11	18	15	19	25
No. Count Day Indiv.	1008	846	365	283	8169	92	22	545	46	353	1650

Table 3-4. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

PRINCE ALBERT December 26	PRINCE ALBERT December 28	PRINCE ALBERT January 4	PRINCE ALBERT NATL. PARK January 4	RAYMORE December 25	REGINA December 26	ST. WALBURG December 26	SASKATOON December 26	SCOTT December 30	SKULL CREEK December 26	SOMME December 30	LOCALITY SPECIES
					164		8				Mallard
							102				Common Goldeneye
							1				Common Merganser
	+1		1			1	1			+2	Goshawk
					+1						Rough-legged Hawk
											Golden Eagle
	+1								+2	1	Bald Eagle
	+1				1		4	1			Merlin
2	1		4	3			11			1	Ruffed Grouse
	1	3		12	22	30	109		2	21	Sharp-tailed Grouse
							8		+29		Ring-necked Pheasant
				6	50		109	42	+18	10	Gray Partridge
210	231	175		33	166		1569	76	6	60	Rock Dove
	1	2		1	4	1	1	2	1	4	Great Horned Owl
		1		+1	4		+1	2		3	Snowy Owl
					4		1				Short-eared Owl
					2		+1		1		Common Flicker
	1		2							2	Pileated Woodpecker
1	2	2	+1	2	+1		9			5	Hairy Woodpecker
2	1	1	1	2	1		9	1	1	4	Downy Woodpecker
			1							1	N Three-toed Woodpecker
				2	38		10		+50	+1	Horned Lark
1	2		7			1				10	Gray Jay
1	+1	8	+2	1		3	23		1	13	Blue Jay
10	21	23	3	33	6	11	397	26	10	29	Black-billed Magpie
51	62	14	3			25				28	Common Raven
10	7	4	5	14	20	4	156	15	14	27	Black-capped Chickadee
	2		6			6		3		6	Boreal Chickadee
1					1		2			2	White-breasted Nuthatch
			1		5		17				Red-breasted Nuthatch
	+1										American Robin
15	170			+20	108		4630	2			Bohemian Waxwing
	+3				+5		27		+15		Cedar Waxwing
	1						3				Northern Shrike
	4			4	20		10				Starling
43	290	130		626	1436	1	3052	888	6	117	House Sparrow
59	38	200		8			26	11		12	Evening Grosbeak
2	2	26	6	2	13		27	21	30	14	Pine Grosbeak
	2						3			+1	Hoary Redpoll
	215	5	+10	223	30		696	10	12	12	Common Redpoll
	2		8				1	8		5	White-winged Crossbill
+1					5				+8	1	Dark-eyed Junco
									+15		Tree Sparrow
	2	500		190	375	30	8	80	+150	56	Snow Bunting
0	0	0	2	0	4	0	6	0	1	2	No. Species in Table 4
14	22	15	13	17	25	11	36	16	11	25	No. Count Day Species
15	28	15	18	19	29	11	39	16	20	30	No. Count Period Species
408	1058	1094	48	1162	3030	113	11108	1188	84	444	No. Count Day Indiv.

Table 3-5. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES DURING COUNT PERIOD. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY.

SPECIES	LOCALITY									NO. (AND %) OF COUNTS DURING COUNT PERIOD
	SPIRIT LAKE December 25	SPRING VALLEY December 29	SQUAW RAPIDS December 27	TOGO December 29	WEBB January 2	WHITE BEAR December 26	WHITEBEECH December 27	WOLSELEY January 4	WYNYARD January 4	
Mallard			6							10 (19)
Common Goldeneye			59							6 (11)
Common Merganser			8							4 (8)
Goshawk	+1		16							14 (26)
Rough-legged Hawk		+1								5 (9)
Golden Eagle			1		1	2				9 (17)
Bald Eagle			4							9 (17)
Merlin		+1								14 (26)
Ruffed Grouse	1		2	1			+1	2		23 (43)
Sharp-tailed Grouse	13	53	7	28		33		9	9	40 (75)
Ring-necked Pheasant						6				13 (25)
Gray Partridge		42		4	17	68				31 (58)
Rock Dove		28			45	95			31	37 (70)
Great Horned Owl	+3	4		1		1				33 (62)
Snowy Owl	2	+1		1		1			+1	36 (68)
Short-eared Owl										6 (11)
Common Flicker										5 (9)
Pileated Woodpecker										5 (9)
Hairy Woodpecker	6		5	3		1	2			28 (53)
Downy Woodpecker	7	1	8	3			2	1	1	35 (66)
N Three-toed Woodpecker			5							4 (8)
Horned Lark		99				22				24 (45)
Gray Jay			10				3			10 (19)
Blue Jay	+1		4	4						28 (53)
Black-billed Magpie	16	11	30	13	22	56		2	13	52 (98)
Common Raven	2		145	11			2			18 (34)
Black-capped Chickadee	21		27	52		6	8	2	18	46 (87)
Boreal Chickadee			33	5						11 (21)
White-breasted Nuthatch	2			1						10 (19)
Red-breasted Nuthatch			5	1						10 (19)
American Robin										4 (8)
Bohemian Waxwing						1				16 (30)
Cedar Waxwing										4 (8)
Northern Shrike			1							9 (17)
Starling		+3			1	3				14 (26)
House Sparrow	312	256	11	100	104	150	20	50	547	50 (94)
Evening Grosbeak				72			12		7	20 (38)
Pine Grosbeak				+22				1	11	31 (58)
Hoary Redpoll	4		7	2						11 (21)
Common Redpoll	86	+150	309	78	8	50	+4	+50	220	41 (77)
White-winged Crossbill			194							8 (15)
Dark-eyed Junco	+1			+12						9 (17)
Tree Sparrow										6 (11)
Snow Bunting	210	208	37	25	40			1	230	41 (77)
No. Species in Table 4	0	1	3	0	1	1	0	0	0	
No. Count Day Species	13	9	26	19	9	16	7	8	10	
No. Count Period Species	17	15	26	21	9	16	9	9	11	
No. Count Day Indiv.	682	702	938	405	239	496	49	68	1087	

1. ASSINIBOIA
2. BATTLEFORDS
3. BIGGAR
4. BIG GULLY CREEK
5. BROADVIEW (a+b)
6. COLD RIVER
7. DALMENY
8. DILKE
9. EASTEND
0. EASTEND
1. ENDEAVOUR
2. FORT QU'APPELLE
3. FORT WALSH
4. FRONTIER
5. GARDINER DAM
6. GOODSOIL
7. GOVENLOCK
8. GRENFELL
9. HAFFORD
0. HARRIS
1. HUMBOLDT
2. INDIAN HEAD
3. KELVINGTON
4. KENASTON
5. KUTAWAGAN LAKE
6. LAST MOUNTAIN LAKE

27. LEADER
28. LOON LAKE
29. LUSELAND
30. MACDOWELL
31. MAIDSTONE BRIDGE
32. MOOSE JAW
33. PRINCE ALBERT
34. PRINCE ALBERT
35. PRINCE ALBERT
36. PRINCE ALBERT NATIONAL PARK
37. RAYMORE
38. REGINA
39. ST. WALBURG
40. SASKATOON
41. SCOTT
42. SKULL CREEK
43. SOMME
44. SPIRIT LAKE
45. SPRING VALLEY
46. SQUAW RAPIDS
47. TOGO
48. WEBB
49. WHITE BEAR
50. WHITEBEECH
51. WOLSELEY
52. WYNYARD

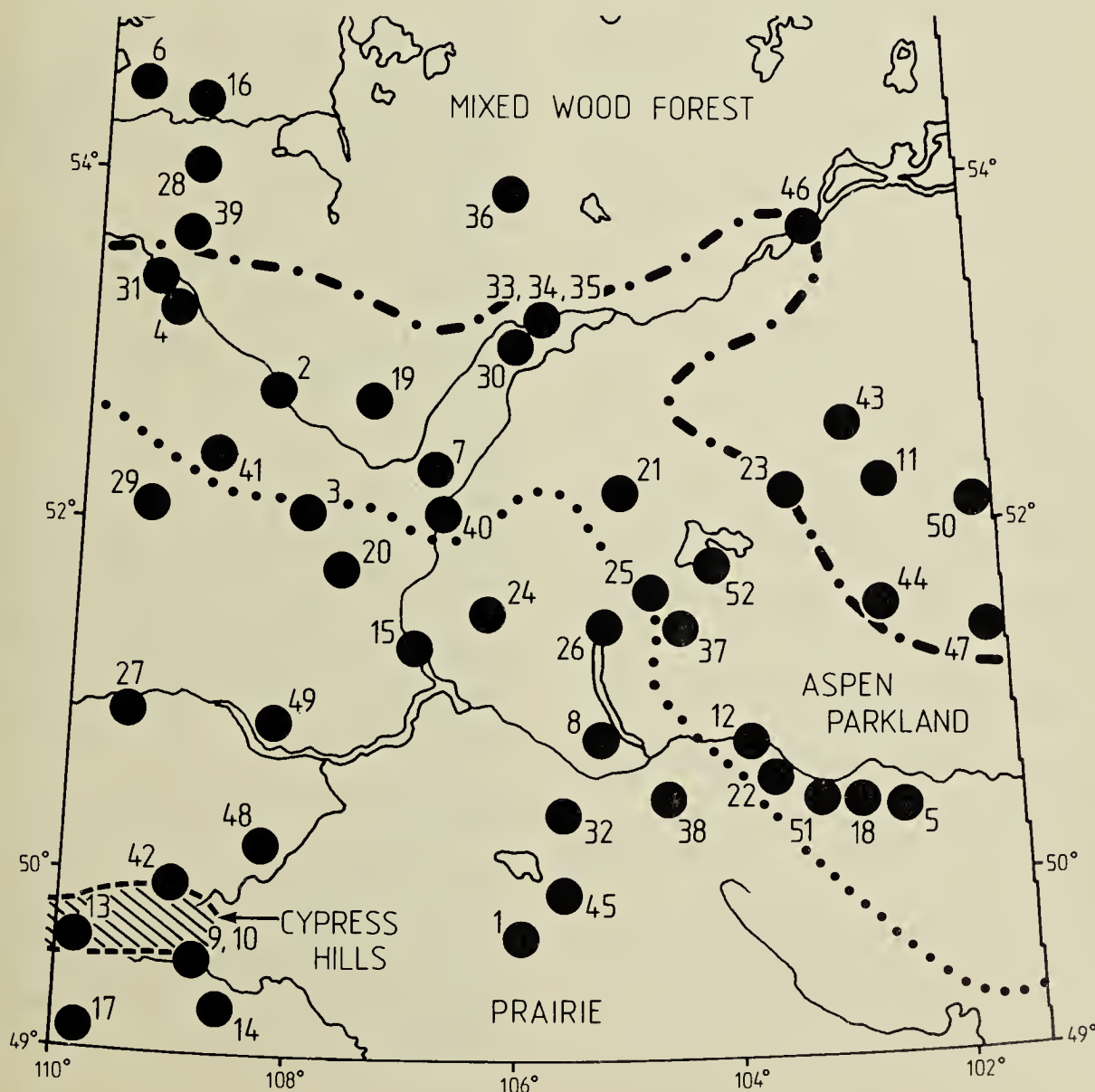


Table 4 — SPECIES SEEN IN THREE
OR FEWER LOCALITIES.

Canada Goose: Regina, 553; Saskatoon, +1.
Green-winged Teal: Fort Walsh, 1.
Sharp-shinned Hawk: Webb, 1.
Cooper's Hawk: Saskatoon, 1.
Red-tailed Hawk: Squaw Rapids, 2.
Marsh Hawk: Harris, 1.
Gyr Falcon: Somme, +1; White Bear, 1.
Prairie Falcon: Indian Head, 1; Moose Jaw, +1.
Peregrine Falcon: Kenaston, +1.
American Kestrel: Skull Creek, +1.
Spruce Grouse: Squaw Rapids, 2.
Sage Grouse: Fort Walsh, +3; Govenlock, 2.
Turkey: Biggar, 3.
Common Snipe: Fort Walsh, 2.
Glaucous Gull: Gardiner Dam, +1; Regina, +1.
Hawk Owl: Prince Albert National Park, +1.
Great Gray Owl: Prince Albert National Park, +2.
Saw-whet Owl: Saskatoon, 1.
Black-backed Three-toed Woodpecker: Fort Walsh, 1; Somme, +1.
Woodpecker Species: Fort Walsh, 1; Squaw Rapids, 3.
Common Crow: Assiniboia, 1; Leader, 1.
Brown Creeper: Fort Walsh, 1; Regina, 1.
Townsend's Solitaire: Eastend (Map No. 9), 2; Fort Walsh, 1.
Golden-crowned Kinglet: Fort Qu'Appelle, 1; Fort Walsh, 10.
Red-winged Blackbird: Fort Walsh, 1; Gardiner Dam, 8.
Rusty Blackbird: Dilke, 1; Spring Valley, +1.
Brewer's Blackbird: Govenlock, 2.
Common Grackle: Indian Head, 1.
Cardinal: Saskatoon, 1.

Gray-crowned Rosy Finch: Eastend (Map No. 9), 65.

Pine Siskin: Saskatoon, 50.

Red Crossbill: Fort Walsh, 40; Saskatoon, 25.

Oregon Junco: Fort Walsh, 1.

White-crowned Sparrow: Fort Walsh, 1.

Lapland Longspur: Govenlock, 1; Regina, 1.

FORT SMITH, NORTHWEST TERRITORIES

DATE: 26 December 1980

WEATHER: Overcast with snow flurries. Temperature -25°C. Snow depth about 30 cm. Daylight hours 0900-1600.

ROUTES COVERED: Exactly as in previous years (see *Blue Jay* 38(1):30). Additional several km walked within town. Total: 150 km by car and 5 km on foot in 32 parts hours.

BIRDS SIGHTED: Spruce Grouse, 1; Willow Ptarmigan, 1; Gray Jay, 6; Common Raven, 140; White-winged Crossbill, 32; Pine Grosbeak, 16; Redpoll sp., 64; House Sparrow, 1. Added Pine Siskin, 2; and Snowy Owl, 1, on 25 December.

SUMMARY: Ten species and 264 individuals.

CONTRIBUTORS: Nancy and Ian Church, Marg and Ernie Church, Ralph Whaley, Ralph Checkley, Cheryl and Jeff Langille, Doug Anions and Dan Graham (compiler).

THE WEMYSS SISTERS: SASKATCHEWAN'S FIRST LADY BIRDWATCHERS, 1898-1940

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan
S7N 0J8.

From the records in the United States Fish and Wildlife Service files, it would appear that Wiseton, Saskatchewan had more birdwatchers than any other place of its size in North America. The first lists of spring migration dates from Wiseton were sent to the Biological Survey in Washington, D.C. back in 1915, with at least five different women contributing in succeeding years.

When Mrs. Marguerite Wilson as compiler of the Wiseton local history book was looking for more information about the contributions of Mrs. Margaret M. Dickson, she wrote on August 16, 1980 to the Canadian Wildlife Service (CWS) in Ottawa. Because current bird censusing in Canada is coordinated from the Maritimes office by Tony Erskine, the request went to Sackville, New Brunswick. With good government buck-passing, the request logically came back to Bernie Gollop in the Saskatoon office of CWS. Knowing that I had collected many of the old migration dates from Washington, Bernie forwarded the request to me.

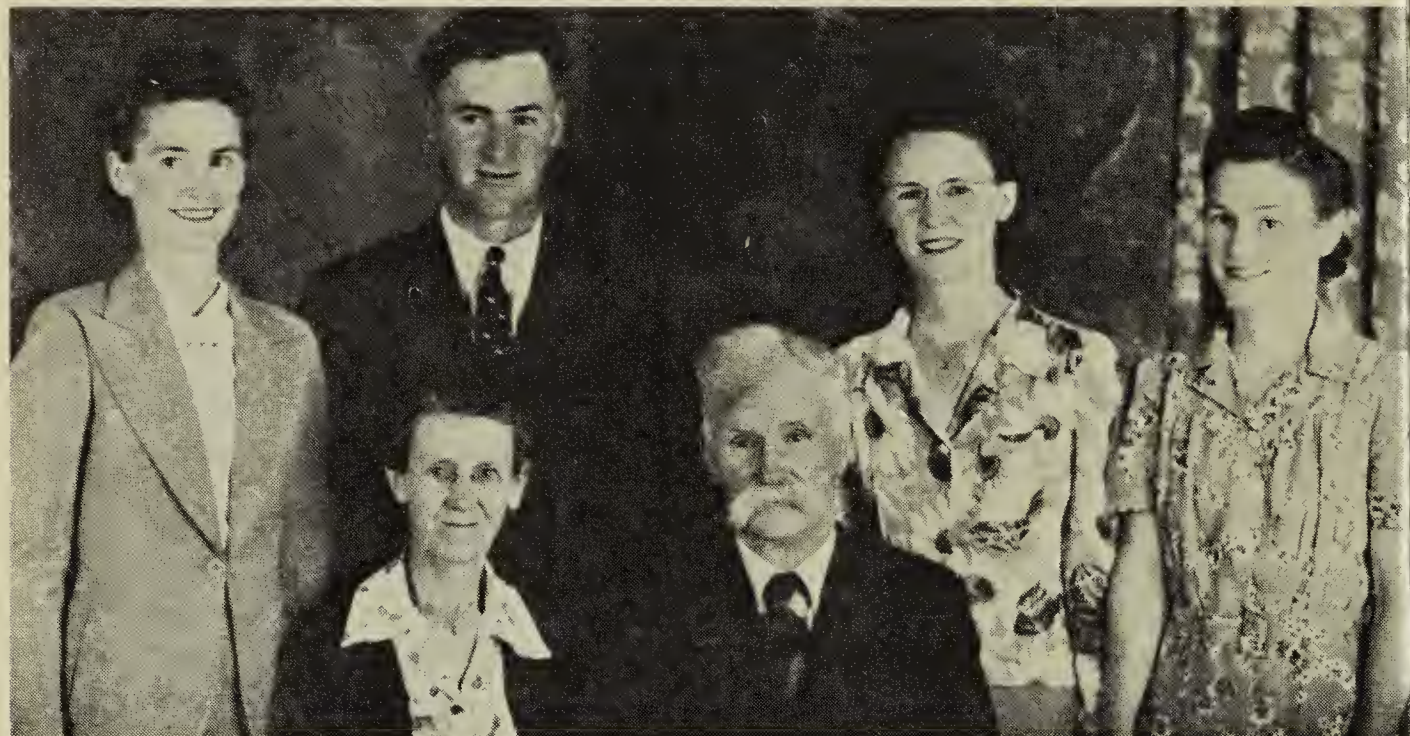
Indeed, I already had in my files electrostatic copies of the long sheets of original records from Wiseton for many years, submitted by the five Wiseton women. For 1915, 1917-18-19 and 1921, the spring records were sent in by Miss Ethel Belle Capling, 4-TWP28-R12-W3. In 1923 and 1924 records were compiled by Miss Beryl

Dickson of "Vistamere" farm, 32-27-12-W3, 3 miles north of Wiseton. Miss Esther Dickson sent in another set of records in 1924; the early dates were the same and later ones different. Although observations from Wiseton continued, copies of later reports are not available.

In early 1936 the Biological Survey began producing the mimeographed *Bird Migration Memorandum*. This had observations for 1935 from Miss Catherine Dickson, but subsequent annual reports for 1936 through 1940 were all by Mrs. Margaret M. Dickson, the woman who had masterminded these submissions from the very beginning.

I knew that the birder most familiar with the Wiseton area today is Bill Richards, who moved to Wiseton with the C.N.R. in 1948. I phoned Bill to ask whether any of the Dickson daughters were still alive. Not only was Esther, Mrs. Murray Johnson, living in Rosetown (I phoned her that evening), but to my astonishment the earliest reporter from 1915, Ethel Belle Capling, now Mrs. Downs, was living in Saskatoon!

A few hours later Mary and I took Mrs. Downs to a turkey supper and exchanged information later. I showed her the copies of her 1915 reports. We found to our surprise that Mrs. Downs was in the midst of writing contributions to the Wiseton history — Mrs. Wilson's enquiry had ended up



The Dickson family of Wiseton. (From left to right, back row: Esther, Wemyss, Beryl, Catherine. Sitting: Margaret Maitland (Wemyss) Dickson and David C. Dickson.)

with another member of her own committee — it had come full circle.

But what was this bird record keeping all about? It all began with Wells W. Cooke, a professor of agriculture first at the University of Vermont and later at the University of Colorado. Cooke felt that birds were the farmer's best hope in controlling harmful insects and noxious weeds, but he first needed to know what birds were present in each locality and for how long. He began getting reporters in each state to collect these dates in the spring of 1882. By 1885 he had included Canada and had three observers in Manitoba. In 1893 an American, Will C. Colt, who spent the year at Osler, about 15 miles north of Saskatoon, was the first to report from this part of the North West Territories. These reports, from 1885 on, were collected by the Biological Survey of the United States Department of Agriculture in Washington. Professor Cooke joined this government service in 1901 to

give full-time supervision to his project.

The most consistent support for this project in the Canadian West came from the Wemyss family (pronounced "Weems"). They came from Scotland to Winnipeg in 1880 and moved onto a farm near Reaburn, Manitoba in 1884.

M. Maitland Wemyss began submitting bird migration dates from Reaburn in 1892. When the United States Fish and Wildlife Service in 1941 gave credit to the members of the Wemyss family for their consistent contributions over fifty years, surpassing that of any other family on the continent, they still did not realize that Margaret M. Wemyss and M. Maitland Wemyss were one and the same person.

In 1896, Margaret sent records as "Margaret M. Wemyss" from Neepawa, Manitoba, where she was now teaching school. Her brother George C. Wemyss took over the

Reaburn reports yearly until 1903, but ceased after moving to Winnipeg in 1904.

Meanwhile Margaret's sister, C. Esther Wemyss, sent reports from Reaburn, then Neepawa, and in 1898 and 1899 from Qu'Appelle, Assiniboia, where she was teaching at Starr's Point School. By 1901 she had become Mrs. Esther Cates and was reporting from Bonnie Brae farm, nine miles south of Qu'Appelle. She continued these reports through 1941 as the longest continuous reporter to the scheme. I had copies of her records through 1923 in my files, too, missing only the years 1913 and 1916.

Margaret Wemyss married D. C. Dickson and settled on 32-27-12-W3, nine miles north of Wiseton, in 1908. This farm was on the south shore of Barber Lake, fringed with willows and surrounded by a strip of pasture. It was an ideal location for observing prairie birds.

Ethel Capling Downs recalls that, when Mrs. Dickson enlisted her at the age of 14 years to keep bird arrival dates, she knew little about birds. Mrs. Dickson obviously felt that giving responsibility to Ethel first, and later the three Dickson daughters, would stimulate them to learn. Each girl received the credit, with the submissions under her own name, not Mrs. Dickson's name. Ethel recalls trying to identify each bird from Chester A. Reed's little field guides in the school library. She did not own binoculars.

Ethel Capling's 1915 list contained 60 species, of which 35 were undoubtedly correct identifications; by 1921 she listed 71 species. She had learned well. Her only errors were to call the Ring-billed Gull a Herring Gull and to give the summer Cedar Waxwing the name of the winter Bohemian Waxwing, common errors for birdwatchers at the time.

Beryl Dickson in 1924 had a list of 66 species. Her Barn Owl was almost certainly a Short-eared Owl, her Grasshopper Sparrow a Clay-colored Sparrow, and her Yellow-breasted and White-eyed Vireos were no doubt Warbling and Red-eyed Vireos. Records for the Prothonotary Warbler and Rock Wren are also questionable, but the remainder of her list was credible.

The submissions in the late 1920's and 1930's are not available, but in the *Bird Migration Memorandum* from 1936 through 1941, first-seen dates were reported from the four or, sometimes, five Saskatchewan observers: Mrs. Dickson or Catherine Dickson, Mrs. Cates, George Lang of Indian Head, Laurence Potter of Eastend, and sometimes E. H. M. Knowles of Regina.

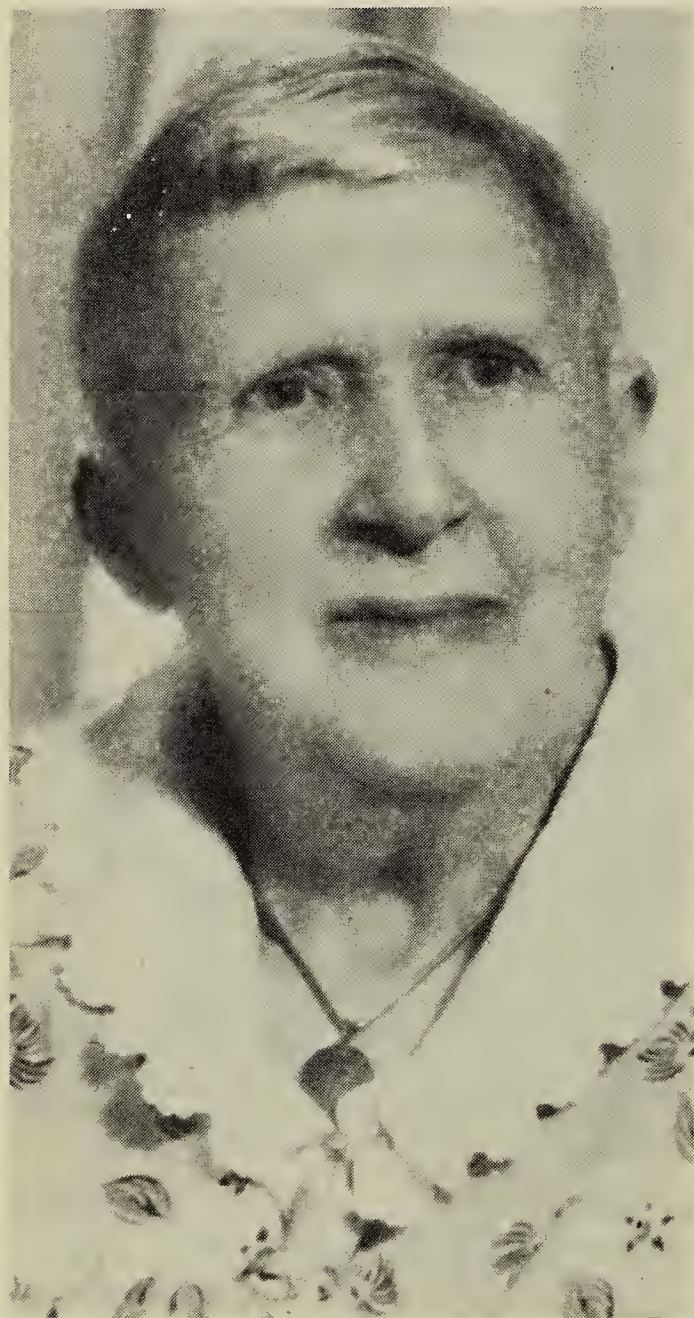
Because of her location beside Barber Lake, Mrs. Dickson consistently had the first-seen dates for two of her favourite birds, the Willet and the Marbled Godwit. Dates for the Willet were 29, 28, 30 and 26 of April and for the Godwit 26, 27, 26, 26 and 23 April in successive years.

There are several interesting Wiseton records among these arrival dates. The first sight record of the Parula Warbler for Saskatchewan was made by Beryl Dickson at Sovereign on 10 May 1935, and was the basis for the only record for Saskatchewan mentioned in the Fifth edition of *The American Ornithologists' Union Check-list of North American Birds* in 1957. Another interesting record was the single Gray Partridge seen near Wiseton by Beryl Dickson on April 13, 1923, the first for the area.

Ethel Capling made no mention of the House Sparrow in 1915, but in 1917 recorded it as "here all winter." This introduced species had reached Carnduff in 1900, Yorkton in 1901, the Cates' farm near Qu'Appelle in 1903,

and Eastend in 1907. One would have expected few of these sparrows at Wiseton prior to construction of the first grain elevator there in 1913. Wintering sparrows on district farms were probably not regular even in 1919, when Ethel noted the first two on the Capling farm on 6 March and several more on 14 March; they then became regular and common on 22 March.

By sympathetic perusal of the migration dates submitted from Qu'Appelle by Mrs. Esther Cates, one can learn a great deal about the difficulties faced by pioneer birdwatchers, as well as a little about



*Mrs. Esther (Wemyss) Cates
of Qu'Appelle.*

the changing patterns of the birds themselves.

First, Mrs. Cates for years did not own any bird book! Appended to her dates for 1906, after 14 years of record keeping, is the plaintive question: "Have you any pamphlets or other books with pictures of birds by which we could identify them?" Second, Mrs. Cates accepted observations and identifications from neighbors and, perhaps, even from children without question.

Terminology was a real problem, in the early years especially. It is a reasonable assumption that "Wavy" was the Snow Goose, "Chewink" the Rufous-sided Towhee, and "Skunkbird" the Bobolink. Further light was shed by noting in entries from later years that the "Diamond Duck" was the American Wigeon, the "Lifebird" the Horned Lark, and the "Lemonbird" the Goldfinch. Dates sometimes give clues, so the "Red-crested Sparrow" on April 6, 1898 was no doubt a Tree Sparrow and not a Chipping Sparrow. The "Blue-backed Swallow" on May 4 of that year was almost certainly a Tree Swallow. I had thought it would be difficult to mistake a Scarlet Tanager: "four on 28 May 1899, last seen 30 May breeds; two on 20 May 1901, last seen 22 June; two on 19 June 1905," until I was shattered by her comment after her June 1906 arrival date for the "Scarlet Tanager": "either that or a garden oriole." And an oriole it, no doubt was.

One might make reasonable guesses as to the identity of the "Tookee," "Cut-throat Sparrow" and "Tzee-tzee Sparrow," but how would one know which was which between "Gopher Hawk," "Hen Hawk" and "Chicken Hawk"? And what were the "Large Grey Linnet", "Little Brown Sparrow", "Large Sparrow", "Large Seagull", "Freshwater Gull", "Big Grey Owl", "Small Grey Owl", "Big

Brown Woodpecker", "Small Grebe" and "Lesser Grebe"?

One suspects that several names were sometimes given to one species. The "Blackcaps" on 12 March 1898, were chickadees, was not the "Phoebe" reported on 29 March 1889, merely the spring song of the chickadee — and what about the "Tom-tit" on 8 May 1899?

Mrs. Cates' identifications improved steadily over the years, although in 1920 she still spoke of a "Tzee-tzee Sparrow", probably a Clay-colored Sparrow. In 1922 she still spoke of "Lemonbird" and her 19 April date for a "Rose-breasted Grosbeak" was most probably a Pine Grosbeak. One cannot accept her identifications of species such as Field Sparrow, Summer Tanager, King Rail, Red-bellied Woodpecker and Roadrunner.

All identifications between 1935 and the last issue of *Bird Migration Memorandum* which listed species and dates in 1941 were plausible, with the probable exceptions of a too-early LeConte's Sparrow on 14 April 1936, an Orchard Oriole on 10 June 1937, and perhaps the Parula Warbler she reported from Qu'Appelle on 10 May 1935.

Mrs. Cates' important early notes on the arrival of the House Sparrow at Qu'Appelle in 1903 and further observations of this new species through 1907 have an authentic ring and have already been published. Her first-ever hummingbird sighting was on 10 June 1906. Bobolinks were unusually common in 1903, when they were first seen on 7 June, while the American Cootner was unusually numerous in 1910. The Black-billed Magpie, not common in the early days, merited mention in 1898: "Two of these birds have been here for two years and are this season breeding here."

Epilogue

We have come a long way since the turn of the century, when field identification was so uncertain that only specimens shot and skinned were considered reliable proof of a species' presence. We often forget that birding with binoculars did not really become practical until publication of Peterson's first *Field Guide* in 1934. We forget that this "revolution" continues to advance as each new edition of the field guides becomes more helpful, and as better binoculars and telescopes with coated lenses, and more and more bird song records become available. In Saskatchewan, contacts fostered by the field outings of local and provincial Natural History Societies and our *Blue Jay* have allowed newcomers to greatly shorten the "apprenticeship period" and quickly surpass their more experienced mentors who are beginning to experience early decrements in sight and hearing.

We must not belittle the slow, halting progress of the Wemyss girls. Their full story has been pieced together because of a "Celebrate Saskatchewan" event, and it is only appropriate that we should stop and salute their dogged perseverance that in time conquered most of the difficulties faced by pioneer birdwatchers.

Acknowledgements

I am grateful to Mrs. Esther Johnston of Rosetown for supplying photographs of the Dickson family and of Mrs. Cates, and to Chandler S. Robins of the Patuxent Research Center, Laurel, Maryland, who so kindly provided copies of the Capling, Cates and Dickson migration records. Additional help was given by Lloyd Rodwell of the Saskatchewan Archives, and by Roy McLaughlin, W. S. Richards, Mrs. Marguerite Wilson and Mrs. Ethel Belle Downs.

HISTORY OF RICHARDSON'S MERLIN IN SASKATCHEWAN

C. STUART HOUSTON, 863 University Drive, Saskatoon, Saskatchewan, S7N 0J8 and ADAM SCHMIDT, 329 7th St. East, Saskatoon, Saskatchewan S7H 0X2.

The story of Richardson's Merlin began more than 150 years ago. Dr. John Richardson recognized that there were two forms of merlin in the 1820's when he visited northwest Canada as surgeon and naturalist to the first two Arctic exploring expeditions led by Sir John Franklin. He considered the lighter coloured birds on the edge of the plains to be the Merlin, then called *Falco aesalon*, that he knew so well in Britain. He correctly gave the name of *Falco columbarius*, Pigeon Hawk, to the darker bird of the northern forests, which had been named by Linnaeus from a South Carolina specimen of Catesby's.³³

When Robert Ridgway studied the taxonomy of the North American Merlins in 1870, he did not have access to Richardson's female specimen which had been collected on 14 May 1827 at Fort Carlton.³⁴ The bird was obviously nesting nearby since there was an egg in the oviduct. Although Ridgway used a specimen from southeastern South Dakota, outside the known breeding range of any race of Merlin, as the "type specimen," he did recognize the priority of Richardson's specimen from Carlton by naming the new, paler subspecies as *Falco richardsonii*, Richardson's Merlin. Thirty-five years later in 1905 Ridgway himself reclassified it as a subspecies, *Falco columbarius richardsonii*.²

Meanwhile the next naturalist to visit Fort Carlton was Thomas

Blakiston with the Palliser expedition who in 1858 recorded the first nest ever found of the Richardson's Merlin 3 m above the ground in a clump of willows and aspen.⁴ The nest with four eggs and the parent birds were collected on 25 May 1858. Blakiston assumed incorrectly that the Merlin had built the nest; both crows and magpies were present, although both were much less common than they are today.

Blakiston failed to appreciate that all of our falcons, like all of our owls take over an appropriate nest site without building a proper nest structure themselves. The Merlin elsewhere has been known to use hollow trees and ledges on cliffs, but in Saskatchewan the Merlin is the falcon equivalent of the Long-eared Owl, taking over crow and magpie nests.

All early writings suggest that Richardson's Merlins on the great plains were restricted to wooded river valleys for nesting. Allen,¹ Coues⁸ and Grinnell,¹⁶ in the Dakotas and Montana in the 1870's, and Macoun in what is now Alberta and Saskatchewan in 1879 and 1880,²⁵ each found Richardson's Merlin restricted to the wooded river valleys.

H. Roy Ivor, as a lad of 13 years found the second recorded nest of the Merlin in western Canada, in a poplar on 20 May 1883. A detailed surveyor's map of that year in the Saskatchewan Archives showed the only sizeable clumps of trees in the town



Merlin.

Fred Lahrman

ship to have been in the bottom of Moose Jaw Creek valley less than 0.5 km from the Ivor homestead on SW 6-16-25W2, 10 km south and 6 km east of Moose Jaw. Macoun gained Ivor's eggs for his own collection, but since he was unacquainted with Blakiston's writings he claimed this as the "first authentic nest on record."²⁵

The next Richardson's Merlin nests were from Calgary where J. E. Houseman found two nests along the Bow River in May 1894,¹⁹ and where G. F. Dippie found five or six pairs on territory and located two nests in 1895.⁹ Dippie incorrectly credited Houseman with the first nest ever found, and claimed for himself the second and third nests on record.

Richardson's Merlins also nested at Wood Mountain where H. Hedley Mitchell collected young and adults on 10 July 1915.²⁸ Spreadborough collected a pair of Merlins on 26 June 1894 along the coulees of the north edge of the Cypress Hills.¹⁵ About 20 km further west in a coulee in the West Block of these hills, Mitchell

collected eggs and adults from a previous crow's nest in a pine on 10 June 1921.²⁷ In 1925, at the junction of Farwell Creek with the Frenchman River, on the south slope of the Cypress Hills, Mitchell and Fred Bard collected one of two pairs of Merlins that were present, together with five Merlin eggs in a former magpie nest.⁵

Laurence B. Potter, who began ranching in 1901 near Eastend, reported in 1930 that Richardson's Merlin was now a disappearing bird of prey: "The Merlin used commonly to nest in the vicinity; in the past four or five years I have failed to find a nest."³¹

Merlins were also residents of the Qu'Appelle Valley and its tributaries. In 1898, Edward Arnold collected three eggs in a nest of grasses 2.5 m up in a maple near the lake at Fort Qu'Appelle on 24 May 1898 (letter from W. E. Godfrey to G. A. Fox, 13 January 1961). The next year on 8 June 1899, Arnold collected a pair and four eggs near the same "Fishing Lakes" (letter from H. G. Deignan to

G. A. Fox, 10 July 1961). In a coulee draining into the valley 10 km west of Fort Qu'Appelle, R. H. Carter, Jr., banded four young Merlins on 23 July 1923 and another four on 5 July 1925, but identified only the latter as being definitely of the pale subspecies.⁶ The senior author (CSH) banded two young Merlins in a magpie nest in willows in the Arm River Valley west of Regina Beach on 7 July 1957. In 1959, the Saskatchewan Falconry Club found a pair on territory in the valley near Craven, and a pair at a nest near the valley at Tregarva.

Along the South Saskatchewan River south of Eaton and Kindersley, Glen A. Fox found three Merlin nests in 1958 and one in 1959. Maher and his students found single nests in coulees along the South Saskatchewan River east of Matador in 1967, 1969 and 1972,²⁶ and in the same area CSH banded 4 young on 22 June 1974 and five and four young 2 km apart in one coulee on 15 June 1980, all in magpie nests. Further east near Demaine, CSH banded five young in a magpie nest in a coulee on 17 June 1978.

In Douglas Park, south of the elbow of the South Saskatchewan River, Gary G. Anweiler and John Polson found four pairs of Merlins on territory in 1976. AS found two nests there the next year, one with four young in a crow nest on 24 June and one with five young in a magpie nest on 5 July.

It is not surprising that Richardson's Merlins occur as far northeast as Nipawin, since the habitat along the Saskatchewan River there is similar to that at Carlton. Between 1952 and 1958, Maurice G. Street recorded seven nests in seven years.²³ After Street ceased banding CSH banded five and three young in two crow nests on the edge of Nipawin on 1 July 1964. Stan Riome located breeding pairs near Nipawin in 1966, 1967 and two pairs in 1969.

A pair of Merlins nested on an island in the North Saskatchewan River at Battleford from 1959 through 1962; the pair was present but apparently not nesting in 1963 (Spence G. Sealy).

The rough topography of the Big Muddy Badlands is also attractive to Merlins and an intensive study by the Saskatchewan Falconry Association there in 1969 turned up no less than 10 nests.¹⁷

The only nesting records of the Merlin from the "parkland" area in early settlement days are from the Yorkton-Saltcoats area, where Walter Raine visited with Frank Baines at Crescent Lake in the first half of June 1901. A nest with four eggs on 2 June and two nests with five eggs each on 5 June 1901 are in the Chicago Museum of Natural History (letter from Emmet R. Blake to G. A. Fox, 9 January 1961) and six eggs collected by Raine at Crescent Lake 3 June 1901 are in the Museum of Vertebrate Zoology at Berkeley (letter from R. J. Neidrach to G. A. Fox). Finally, Edward Arnold collected five Merlin eggs from a crow nest at Crescent Lake on 17 May 1904 (Neidrach to Fox).

On 2 May 1979 while CSH attended an interment in the Yorkton cemetery a pair of Merlins acted as though on territory. On 28 June of the next year he banded five young 9 m from the ground in a spruce in the same cemetery. One or two territorial pairs have been seen near Good Spirit Lake in recent years.

There is no evidence that Merlins nested elsewhere on the open plains beyond the wooded valleys and some of the rougher and more wooded country mentioned above prior to the 1930's. R. T. Congdon's studies in the Kinistino-Basin Lake area in May and June 1902,⁷ and those of J. F. Ferry and R. M. Barnes at the Quill Lakes in

1909,¹⁰ did not record a single Merlin. Just north of the Cypress Hills, at Maple Creek, Crane Lake and Bigstick Lake, extensive investigations by A. C. Bent, Herbert K. Job and Chester S. Day in June 1905 and by Bent, Louis B. Bishop, Alfred Eastgate and Jonathan Dwight, Jr., in June and July of 1906, recorded no Merlin nests whatever and they collected only two specimens.³ As late as May and June of 1932, a Carnegie Museum party studied birds in the Davidson area, between Elbow and Last Mountain Lake, collecting two apparently non-breeding birds and finding no nests.³⁶

Shelterbelts around farms began to reach maturity after about 1920.²² As many uneconomic farmsites were abandoned by farmers in the 1930's and as the increased numbers of magpies made more nest sites available,²¹ Merlins undoubtedly occupied new districts where substantial areas of unbroken grassland persisted adjacent to the new nesting opportunities. This was particularly true if the soil was somewhat sandy. Shelterbelts on the plains not too far from river valleys were probably the most attractive.

Then in the early 1960's a Merlin "crash" occurred, at least in the Kindersley area. This is the only area where adequate checks were made before and during extensive use of dieldrin for grasshopper control between 1958 and 1964.¹⁸

When Glen A. Fox began studying Merlins near Kindersley in 1956, they nested commonly in shelterbelts of deserted farms.¹¹ Fox found four nests in 1958, four in 1959 and three in 1960. In 1958, Richard Fyfe directed CSH to a nest 10 km north and 10 km east of Kindersley where three young were banded in a crow nest in a willow.

Merlin eggshells were already becoming thinner by 1960, and by

1962 only one of Fox's six Merlin sites remained occupied.¹² Fox made regular checks of the area in 1963, when no nesting Merlins could be found, and continued to make occasional checks yearly through 1967, and brief visits in 1972 and 1973. Fyfe also grew up at Kindersley and sporadically visited 15 previous Merlin sites there and from Dodsland to the Alberta boundary through the late 1960's, without finding any nesting birds. These old sites were all visited again by Keith Hodson in 1972, who found none occupied, although he did locate two unsuccessful Merlin nests north of Marengo.

In 1969, CSH began regular banding visits each June and again each July to Ferruginous and Swainson's Hawk nests in and near the large community pastures, which by then contained most of the remaining grassland west of Kindersley. In the first six summers, through 1974, not a single Merlin was heard or seen. In contrast, beginning in 1975, nesting Merlins have been encountered yearly, and have been found nesting more commonly in the Kerrobert, Rosetown-Biggarr and Saskatoon areas. These are tabulated below:

KINDERSLEY AREA:

- 1975: 28 June, 3 young in crow nest, Kindersley-Elna (K-E) Community Pasture.
- 1976: 28 June, 3 young in crow nest, K-E Pasture, 3 mi farther east.
25 July, 3 fledged young from crow nest, edge of Beaufield Pasture.
- 1977: 17 July, pair on territory, no young located, Community Pasture north of Hoosier.
- 1978: 24 June, 5 young in magpie nest south of Flaxcombe.
- 1979: 2 July, 3 young in magpie nest at Hoosier Pasture.
- 1980: 22 June, 4 young in magpie nest at Hoosier Pasture.

KERROBERT AREA:

- 1977: 25 June, 5 young in crow nest (only successful nest of three pairs in a

60-km² portion of Mariposa Community Pasture surveyed by AS).

- 1978: June 22, 2 young in crow nest.
June 25, 5 eggs in crow nest, failed by 15 July.
15 July, 4 fledged young from Swainson's Hawk nest. These three nests were in a line, at 1.6 km intervals, in Mariposa Pasture.
- 1979: 1 July, 3 nests with 4, 5 and 5 young in Mariposa Pasture and nest with 5 young in Progress Pasture, all in magpie nests, all found by John and Bruce Hanbidge in June.
- 1980: 21 June, 5 young in magpie nest, Mariposa Pasture (partial search only).

ROSETOWN-BIGGAR AREA:

Seven years of surveys by the Renaud brothers through 1974 failed to reveal any nesting Merlins.³² Gerhard Stuewe then found a pair nesting near Harris in 1976 and in 1977 AS began work on his Sharp-tailed Grouse study area near Duperow. The following nest records were obtained in the next 4 years:

- 1977: 28 June, 4 young in magpie nest and 4 in crow nest, near Harris.
28 June, 3 and 5 young, both in magpie nests, near Duperow.
- 1978: 24 June, 5 young in magpie nest at Harris.
26 June, 5, 5, 4, 2 and 1 young in magpie nests at Duperow, with a sixth nest that failed.
26 June, 3 eggs in crow nest at Richmond Lake south of Biggar, failed but pair still territorial on 15 July.
- 1979: 5 July, 5 young in magpie nest at Harris; second pair failed.
1 July, 5, 5, and 5 young in magpie nests at Duperow, one nest overlooked.
1 July, 3 young in crow nest at Richmond Lake.
1 July, 3 young in magpie nest near Ruthilda.
- 1980: 5, 5, 5 and 6 young in magpie nests at Duperow and 5 young in magpie nest at Ruthilda, banded by John Polson.



Young Merlin.

C. Stuart Houston

SASKATOON AREA:

The Merlin has probably always been a nesting species along the North Saskatchewan River valley and possibly at selected sites along the South Saskatchewan. On 3 May 1959, J. B. Gollop found a pair at a nest on the river bank at Ceepee siding, 3 km north of the bridge where Highway 16 crosses the North Saskatchewan. Canoe surveys by Oliphant in 1975, 1976 and 1977 found Merlins regularly distributed along the next 40 km of river downstream from the bridge.

Nests away from the river valley have been found 10 km east of Swanson on 18 June 1965 (R. V. Folker), at the Dundurn military camp in June 1977 and in the Bradwell cemetery in 1979 and 1980.

As a resident of Saskatoon since 1960, CSH has watched with interest the increase of the Merlin as a nesting species within the city. The first nest on record was in the secluded trees of the Labatt's Brewery grounds on the river bank immediately adjacent to the Saskatchewan Crescent residential area. Here a Merlin was seen on a nest high in a tree by Michael A. Gollop on 10 May 1963, and again by Gollop and J. A. Slimmon on 12 May; the tree was not climbed. The next nest was found by Slimmon with young just out of the nest in

Woodlawn cemetery on 7 July 1970. Merlins nested at Simpkins market garden along the river bank in 1971 and on 4 July 1972 CSH banded 5 young there in a crow nest in a spruce.

In 1973, the first nest located in a residential area contained four young in a crow nest 10 m high in a spruce on Elliott Street, with the young banded on 29 June. Two other Merlin nests that year, one in Woodlawn cemetery and one at the north edge of the University property, both failed.

In 1974, Oliphant took over banding of Merlins within Saskatoon and in 1979 John Polson made this study part of his Master's thesis project. There were at least 7 resident pairs in 1978, at least 10 in 1979 and 15 pairs within the city limits in 1980.

Discussion

Richardson's Merlin has always had a somewhat restricted distribution in Saskatchewan initially confined chiefly to wooded river valleys. It probably colonized new grassland territory, taking advantage of the increased numbers of corvid nests that became available, after shelter belts grew to maturity and marginal farms were deserted.

The Merlin suffered a production and population decline in the Kindersley area from 1960 to 1962 and was then essentially absent there until the 1970's. Weekend visits to deserted shelter belts in larger pastures near Kindersley suggest that a minor resurgence has occurred since 1975. However, these sites are occupied more erratically than in areas such as Duperow where pairs consistently nest within 100 m of their previous sites, year after year. Other former sites nearer Kindersley now have insufficient grassland within the foraging area to support the return of the Merlin.¹⁸

In his Hanna, Alberta, study area, Keith Hodson found that 95% of his successful Merlin sites had more than 50% of their territory in grassland.¹⁸ Hodson studied air photos of the 15 former Merlin sites in the Kindersley area; between 1956 and 1961 10 of the 15 territories were more than 50% grassland, whereas by 1971 only four of the old sites were more than 50% grassland.

Hodson also documented the increased burdens of biocides which threatened Merlins, and noted the extensive use of dieldrin around Kindersley between 1958 and 1964. Two eggs from a Merlin nest north of Marengo in 1972 contained 2.78 and 3.24 parts per million of dieldrin; with one exception these were the highest of 166 eggs he tested for this chemical.

At his main study area near Hanna, Hodson found that Merlin egg-shell thinning correlated with decreased productivity and with high levels of DDE in the eggs. Fyfe, Risebrough and Walker also reported that the eggshells were thinnest in Merlins that produced no young, and progressed towards pre-biocide shell thicknesses as they produced two, three or four, and five young, respectively.¹⁴ There is thus substantial evidence that biocide levels contributed to the decline of the Merlin in the Kindersley area, and that high biocide levels may be associated with changes in behaviour.¹³

On the other hand, we have no evidence concerning Merlin numbers in many areas through the 1960's, although we know that their numbers were maintained at fair levels in the Nipawin mixed forest area to the north and in the Big Muddy badlands to the south.

However widespread the Merlin decline in the 1960's may have been, and it was well documented only for

Kindersley, we can now say with assurance that the Richardson's Merlin is not now a threatened subspecies. Many of the nests mentioned in this paper were used in Oliphant's 1979 calculations for 47 successful nestings in Saskatchewan between 1970 and 1977, which showed production of 4.0 young per successful nest.³⁰ This compares most favourably with pre-1950 reproductive levels of 3.1 to 4.3 young per successful nest.

Further, while the increased numbers of nests found in recent years undoubtedly reflect more the interest and industry of Merlin watchers than an increase in Merlins, it seems undeniable that the species is a new resident of residential streets of cities such as Saskatoon. This influx into cities was made possible largely because of the preceding movement of crows and then magpies as nesting species into these same residential areas. This occurred in Saskatoon between 1968 and 1972.²¹

Smith has documented the high nesting density of Merlins within the Edmonton city limits, estimated at about 20 pairs. He found that they use crow and magpie nests only in trees that are at least 35 years old.³⁵

The more consistent presence of large flocks of winter birds, particularly Bohemian Waxwings, which followed maturation of mountain ash and crabapple trees in cities, has made wintering for the Merlin much more feasible in the past 20 ± years.²⁰

The oft-repeated statement that certain raptors at the "top of the food chain" are helpful indicators of the quality of our environment is well exemplified by the Richardson's Merlin. Unfortunately the information concerning its past is incomplete and spotty. This interesting race should be monitored more closely in future.

Acknowledgements

We are grateful to Richard W. Fyfe, J. Bernard Gollop, Wayne C. Harris, Keith Hodson, Lynn W. Oliphant, Wayne E. Renaud, and Guy J. Waple, for their constructive criticism of an earlier draft of this paper, and for their contribution of unpublished personal observations. Glen A. Fox contributed important unpublished information about early nest records. Fyfe and Hodson provided relevant portions of Hodson's important thesis. Gollop provided access to the observation cards in the Saskatoon bird record scheme. John Polson summarized the results of his Saskatoon nest observations.

¹ALLEN, J. A. 1874. Notes on the natural history of portions of Dakota and Montana Territories, being the substance of a report to the Secretary of War on the collections made by the North Pacific Railroad Expedition of 1873. *Proc. Boston Soc. Nat. Hist.* 17:33-86.

²BAIRD, S. F., BREWER, T. M. and R. RIDGWAY. 1905. *History of North American Birds. Land Birds.* 3 vols. Boston: Little, Brown.

³BENT, A. C. 1907 and 1908. Summer birds of southwestern Saskatchewan. *Auk* 24:407-430 and 25:25-35.

⁴BLAKISTON, T. 1861-1863. On birds collected and observed in the interior of British North America. *Ibis* 3:314-320; 4:3-10; 5:39-87 and 121-155.

⁵BRADSHAW, F. 1926. Report of the Game Commissioner for the year ended April 30, 1926. Regina: King's Printer. 31 pp.

⁶CALLIN, E. M. 1980. *Birds of the Qu'Appelle, 1857-1979.* Regina: Sask. Nat. Hist. Soc. Spec. Publ. 13. 168 pp.

⁷CONGDON, R. T. 1903. Saskatchewan birds. *Trans. Wisconsin Acad.* 14:569-620.

⁸COUES, E. 1878. Field-notes on birds observed in Dakota and Montana

- along the 49th parallel during the seasons of 1873 and 1874. *Bull. U.S. Geol. and Geog. Survey Terr.* 4:545-661.
- ⁹DIPPIE, G. F. 1895. Nesting of Richardson's Merlin. *Oologist* 12:135-136.
- ¹⁰FERRY, J. F. 1910. Birds observed in Saskatchewan during the summer of 1909. *Auk* 27: 185-204.
- ¹¹FOX, G. A. 1964. Notes on the western race of the Pigeon Hawk. *Blue Jay* 22:140-147.
- ²FOX, G. A. 1971. Recent changes in the reproductive success of the Pigeon Hawk. *J. Wild. Manage.* 35:122-128.
- ³FOX, G. A. and T. DONALD. 1980. Organochlorine pollutants, nest-defense behavior and reproductive success in merlins. *Condor* 82:81-84.
- ⁴FYFE, R. W., RISEBROUGH, R. W. and WALKER, W. II. 1976. Pollutant effects on the reproduction of the prairie falcons and merlins on the Canadian prairies. *Can. Field-Nat.* 90:346-355.
- ⁵GODFREY, W. E. 1950. Birds of the Cypress Hills and Flotten Lake Regions, Saskatchewan. Ottawa: Nat. Museum Canada Bull. 120. 428 pp.
- ⁶GRINNELL, G. B. 1875. Zoological report. Pp. 79-102 in: Report of a reconnaissance of the Black Hills of Dakota, made in the summer of 1874, by William Ludlow. Washington: Engineer Dept., U.S. Army.
- ⁷HODSON, K. 1972. Research Planning Conference on Peregrines and other birds of prey. *Raptor Research News* 5:157-158.
- ⁸HODSON, K. 1976. Some aspects of the nesting ecology of Richardson's Merlin on the Canadian prairies. M.S. Thesis, University of British Columbia.
- ⁹HOUSEMAN, J. E. 1894. Nesting habits of Richardson's Merlin. *Oologist* 11:236-237.
- ²⁰HOUSTON, C. S. 1976. Wintertime bird feeding — prairies. *Nature Canada* 3 (4):3-5, December.
- ²¹HOUSTON, C. S. 1977. Changing patterns of Corvidae on the prairies. *Blue Jay* 35:149-156.
- ²²HOUSTON, C. S. 1979. The spread of the Western Kingbird across the prairies. *Blue Jay* 37:149-157.
- ²³HOUSTON, C. S. and M. G. STREET. 1959. The birds of the Saskatchewan River, Carlton to Cumberland. Regina: Sask. Nat. Hist. Soc., Spec. Pub. 3. 205 pp.
- ²⁴IVOR, H. R. 1968. I Live with Birds. Toronto: Ryerson Press. 172 pp.
- ²⁵MACOUN, J. 1903. Catalogue of Canadian Birds, Part II. Ottawa: S. E. Dawson, Queen's Printer. 194 pp.
- ²⁶MAHER, W. J. 1974. Birds: II. Avifauna of the Matador area. I.B.P. Matador Project, Tech. Rep. 58. Saskatoon: University of Saskatchewan. 36 pp.
- ²⁷MITCHELL, H. H. 1923. More notes from Saskatchewan. *Condor* 25:159-162.
- ²⁸MITCHELL, H. H. 1924. Birds of Saskatchewan. *Can. Field-Nat.* 38:101-118.
- ²⁹OLIPHANT, L. W. 1974. Merlins — the Saskatoon falcons. *Blue Jay* 23:140-147.
- ³⁰OLIPHANT, L. W. and W. J. P. THOMPSON. 1979. Recent breeding success of Richardson's Merlin in Saskatchewan. *Raptor Research News* 12:35-39.
- ³¹POTTER, L. B. 1930. Bird-life changes in 25 years in southwestern Saskatchewan. *Can. Field-Nat.* 44:147-149.
- ³²RENAUD, W. E. and D. H. RENAUD. 1975. Birds of the Rosetown-Biggar district, Saskatchewan. Regina: Sask. Nat. Hist. Soc., Spec. Publ. 9. 121 pp.
- ³³RICHARDSON, J. and W. SWAINSON. 1832. Fauna Boreali-Americana, Vol. II, the Birds. London: John Murray.
- ³⁴RIDGWAY, R. 1870. A new classification of the North American Falconidae, with description of three new species. *Proc. Acad. Nat. Sci. Philadelphia* 22:138-150.
- ³⁵SMITH, A. R. 1978. The merlins of Edmonton. *Alberta Naturalist* 8:188-191.
- ³⁶TODD, W. E. C. 1947. Notes on the birds of southern Saskatchewan. *Ann. Carnegie Museum* 30:383-421.

OBSERVATIONS OF THE MERLIN FROM UNITY, SASKATCHEWAN

ALLEN G. YOUNG, P.O. Box 873, Unity, Saskatchewan, S0K 4L0.

Ever since my early years of birding in south-central Saskatchewan, I have had a keen interest in all birds of prey. Just recently I spent considerable time with the smallest members of the falcon family, the Merlin and American Kestrel. This article pertains to the Merlin.

I have been extensively observing the Merlin in the Unity district for the past three years. My records are all backed up in writing, as well as prints and slides. Most of my work takes place from the last week of April, before the trees leaf out, until the first week of September. Most of my photography takes place early in the summer. My main interests are the number of Merlins in west-central Saskatchewan and their feeding habits. I have found the breeding population in the Unity-Vera area to be quite high, with a density of approximately one pair of birds per 8 km².

Although the female bird is quite a bit larger and a lot more aggressive, the mated pair are very close and fights over food seldom result. Most of my information on habits comes from long observations in tree blinds. Altogether, my records total approximately 80 sightings in locations such as Unity, Unity Gas Flats, Vera, Reward, Salvador, Winter, and Artland, Sask., as well as Chauvin, Alberta. The information below is for two nests: one located 5 km south and 2 km west of Unity — it overlooks the natural gas reserves; the second nest is 5 km north and 5 km west of Unity in the Vera Community Pasture.

Nest 1, Unity Gas Flats

Time spent observing — 20 hours, of which about 16 hours were in a blind 8 feet from the nest.

This area is totally devoid of trees, except in spring-fed ravines and north-facing slopes. The nest was located 10 feet from the ground in a stunted aspen poplar. The entire bluff was about 100 yards long and 30 yards wide, with the stunted trees bound to the sharp slope. The bluff overlooks a 7-mile-long valley (glacial outwash), several hundred feet deep with the gas fields of End Lake at the base.

I first located the nest on 20 April 1978. The ground was still covered with snow. The Merlins were seen circling about a mile away and their continuous cries gave away its location. They had used a magpie nest. The old outer lining of mud was still intact and no additional material was added for a lining. The nest eventually contained 7 eggs, Bent indicates that even six is a rare occurrence.¹ Of five trips to the nest in the morning during incubation, the male was always incubating and the whereabouts of the female was unknown.

The nest was first photographed in the last week of May, when the young were in the process of hatching. Only one bird was totally out of the shell, two other eggs were cracked around. I helped the second bird out and took pictures. It is important to note that on the day of hatching one adult sparrow

sp. (plucked), was among the eggs and hatchling. The plucking log was located about 16 yards from the nest with the ground beneath strewn with the feathers of various sparrows, other song birds, shorebirds and even the feathers of a Black-billed Magpie.

I set up a blind about 2 weeks later and spent several hours each day observing and taking pictures. The female was quite concerned at first but gradually learned to live with the blind. The only prey ever identified at the nest was Clay-colored Sparrow. The prey was nearly always brought to the nest totally plucked. The young falcons were always excited and would almost always pile up against the female, pushing her off the edge of the nest. She, never the male, took care of feeding even though the young were quite large. The male was the provider, exchanging the prey with the female away from the nest site. Whenever the male appeared in the northern skies, the female became very excited, which seemed to rub off on the young birds.

My last observation of this nest was late in July. All six young birds fledged and were noted on several later outings with the adult birds. They stayed in the valley area until late fall. The immature birds were very curious, always diving at each other and occasionally coming to within hitting range of myself. This close family grouping seems to be characteristic of the species. I observed several other playful family groupings during August while working on the C.N. track in the Manitou Forest Reserve.

Nest 2, South Side of Akerlund Lake in Vera Community Pasture

Time spent observing — 10 hours
in 1978.

This area was 70% covered with stunted trees, including aspen poplar and willow as well as sagebrush. The



Adult female Merlin with House Sparrow.
Lynn Oliphant

nest was located when the five young were already fledged. It is interesting to note that nearby, within 300 yards, was the nest of a Cooper's Hawk with three young. Also, within one km were two Red-tailed Hawk nests.

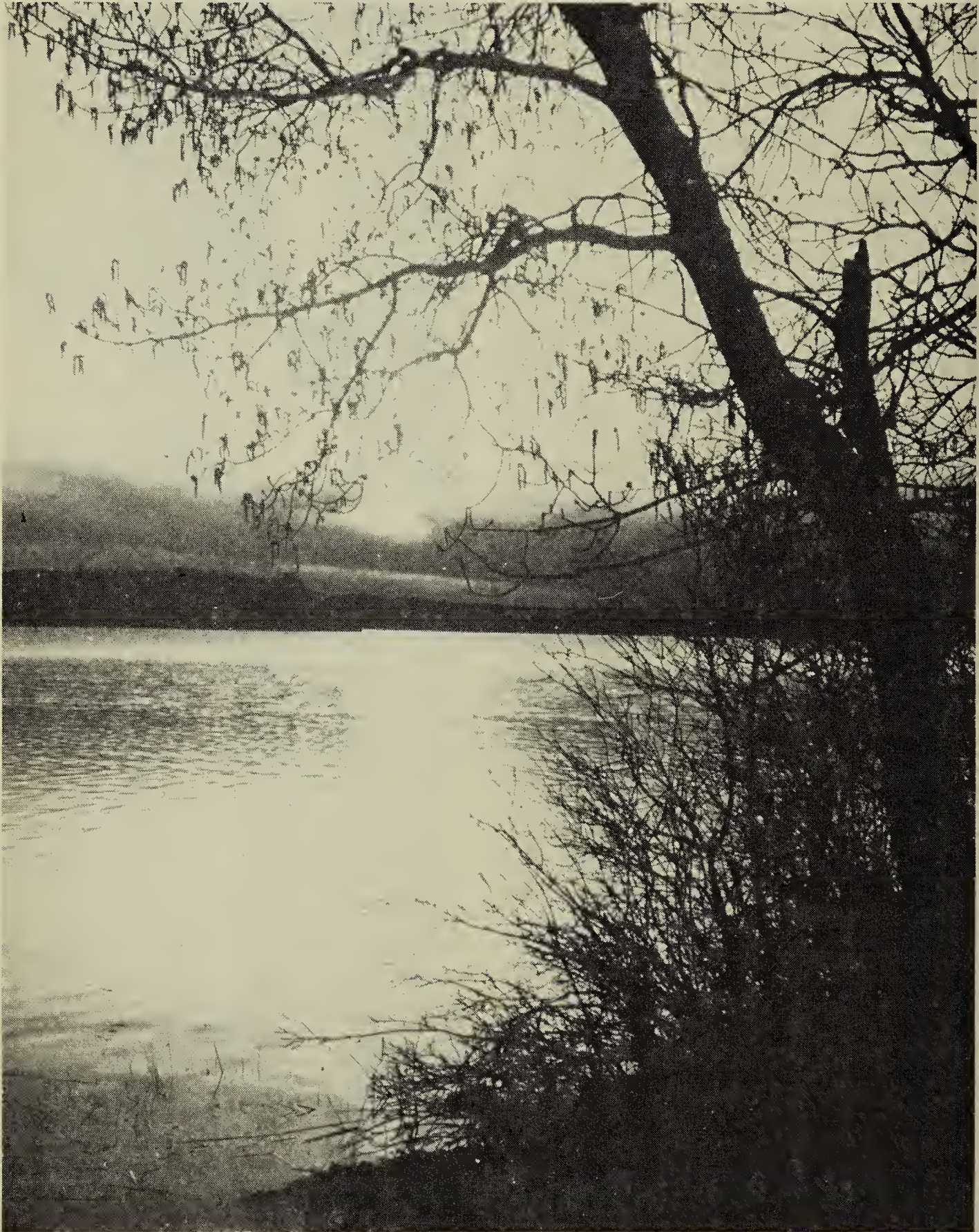
I have no data on incubation or egg coloration, but the adult birds were about the same as those of nest number one. This nest was also an old magpie's, about 12 feet from the ground in an aspen and willow thicket about half a kilometre square. Again the nest was unlined. The young seemed to be healthy and well fed by both parents. The food included many types of song birds. Hunting always included direct pursuit with the advantage of height, always in the open and never in the thorny undergrowth. The falcons had far superior speed in level or rising flight, but

sometimes lacked the precision of movement to capture species such as the Eastern Kingbird.

The stoop is far superior to that of the Kestrel. I have been dived on repeatedly but only by the female and only while approaching the nest from

open terrain. While in close proximity to the nest, the parent birds usually circle or perch within 40 feet.

¹BENT, A. C. 1938. Life histories of North American birds of prey. Part II. Smithsonian Inst. U.S. Nat. Mus. Bull. 170. (1961 Dover Edition).



Sunset at Deep Lake, south of Indian Head, Saskatchewan.

Gary Seib

NORTHERN PHALAROPE FLOCKS AT MIQUELON LAKE, ALBERTA

E. OTTO HÖHN, 11511 - 78 Avenue, Edmonton, Alberta, T6G 0N4.

Miquelon Lake, 28 miles southeast of Edmonton, is the largest, and northernmost of three lakes which are the remnants of a former single larger lake. Water levels in the original lake were greatly lowered by a temporary canal which was dug in 1927 to drain water into the reservoir of the town of Camrose, 15 miles south of the lake. This and a succession of dry years in the early thirties reduced Miquelon Lake to three separate bodies of water about its deepest portions.¹ More recently, a provincial campground has been set up along a segment of the lake shore. The sand brought in to convert its shoreline to a beach has made it attractive to shore birds, particularly during high water levels when the marginal stretches of mud along other portions of the shoreline are submerged. The lake lies in typical aspen parkland country and is surrounded by pastures and poplar woods.

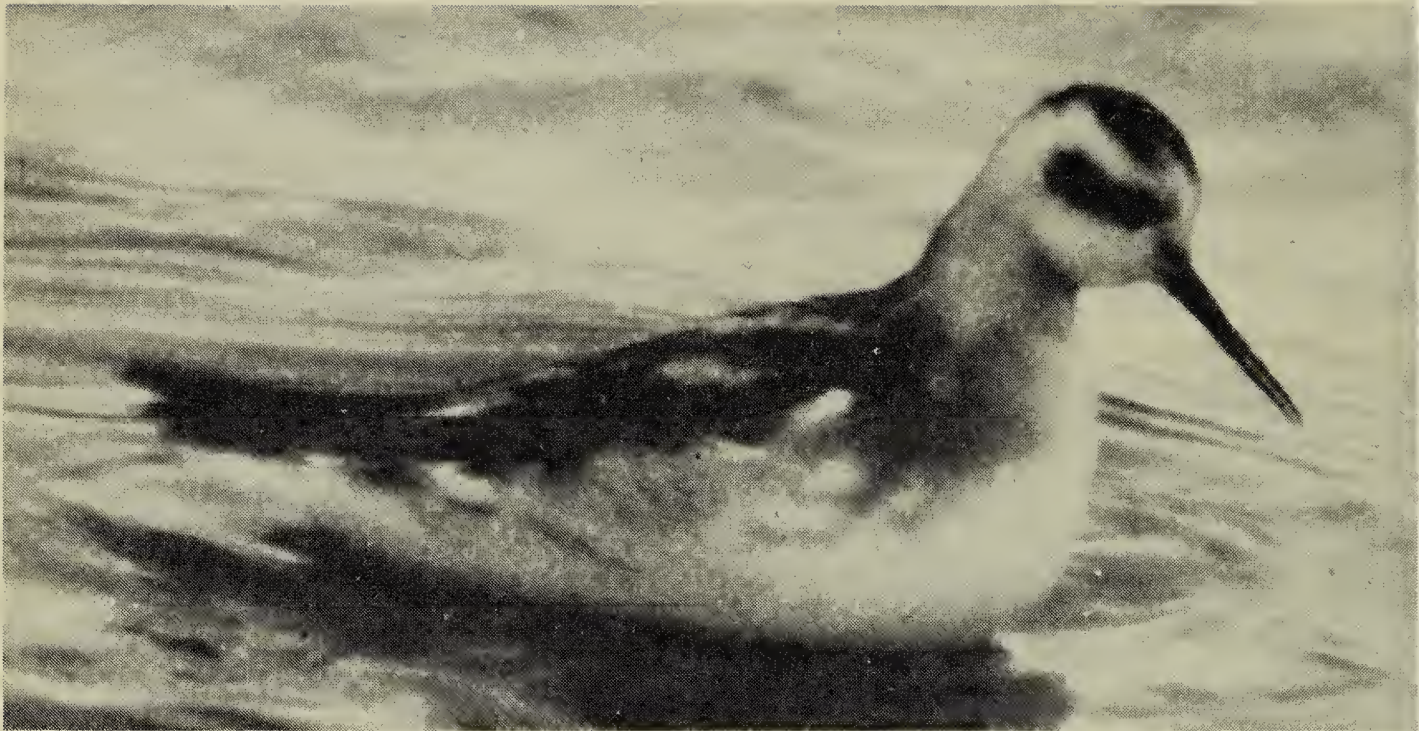
I have visited this lake several times every summer for about 20 years, but although Northern Phalaropes are regular spring and fall migrants through the Edmonton district, I saw none of these birds there until early August 1969 when there was a flock of about 50 well offshore in the most western bay of the lake. During the late summer of the next 4 years, i.e., 1970-1973, flocks of Northern Phalaropes, at times with smaller numbers of Wilson's Phalaropes, were present for some weeks in the same part of the lake. Occasionally they were also seen further east off the beach of the provincial park where I had what may be the unique

experience of swimming among phalaropes. While swimming, it was possible to come within about 6 feet of the birds. The estimated numbers of phalaropes of the two species named seen at Miquelon Lake during the 4 years of Northern Phalarope prevalence are shown in Table 1.

After 1973, up to and including the summer of 1980, the only flock of Northern Phalaropes noted at this lake was one of about 30 birds seen on 24 July 1976. These were in a part of the lake far from the area frequented during the 1970-1973 period.

To explain the limited period during which Northern Phalaropes occurred at Miquelon Lake in impressive numbers, I secured information about the level of the lake from the Alberta Department of Environment. Figure 1 shows the late July lake levels for the years 1964 to 1977 in relation to the estimated peak number of phalaropes seen there in July or August. It is evident that the phalarope years 1969-1973 were years when the water level of the lake was low compared to the preceding and following years. To put it another way, the lake attracted Northern Phalaropes in numbers when it was shallowest.

Northern and Red Phalaropes winter at sea, feeding on plankton organisms, and during this season they frequent deep water. However, during their occurrence inland, Northern Phalaropes prefer shallow to deep water. This is almost certainly a matter of diet. Wetmore found the



Northern Phalarope.

M. A. Gollop

main food items of Northern Phalaropes collected between May and October to be mosquito flies and larvae, aquatic hemiptera and aquatic beetles.³ Dr. G. Evans of the Department of Entomology, University of Alberta, told me that these are

all inhabitants of the shallows but not the deeper portions of inland waters. This would explain why shallow rather than deep waters are attractive to these phalaropes.

But why do they not, when the lake water levels are higher, simply utilize

TABLE 1: Approximate numbers of phalaropes seen at Miquelon Lake, 1970-1972

Date	Northern	Wilson's
3 August 1970	100	some
8 August 1970	130	16
21 August 1970	—	100
22 August 1970	—	20
30 August 1970	—	30
18 July 1971	hundreds	some
23 July 1971	hundreds	—
29 July 1971	200	—
31 July 1971	30 + 15 on shore	2 on shore
7 August 1971	1,000	—
7 August 1972	hundreds	10
12 & 13 August 1972	1,000	—
16 August 1972	several hundreds	—
20 August 1972	several hundreds	—
3 September 1972	100	6
10 September 1972	a few	10
1 October 1972	—	—
13 May 1973	1,000	—
4 August 1973	1,000	—
20 & 25 August 1973	1,000	—

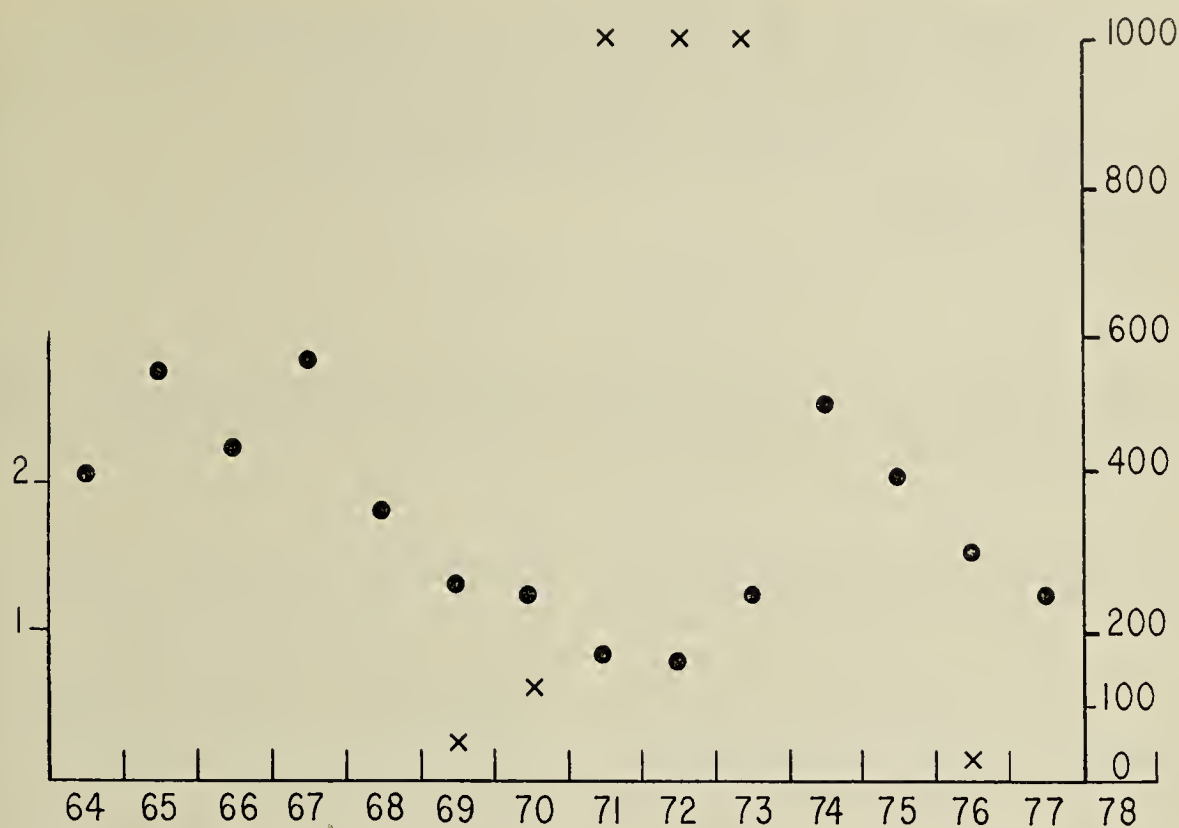


Figure 1. Left scale (dots): July water levels of Miquelon Lake above a standard elevation of 2,500 feet during the period 1964 to 1977 inclusive. Right scale (crosses): estimated peak numbers of Northern Phalaropes in July or August.

areas closer to the shore which should be shallow enough to suit them? While single Northern Phalaropes or small numbers of these birds are often seen just offshore or even on the shore, flocks of these birds at Miquelon Lake were always seen about 100 yards or more offshore. This also applies to the hundreds of Northern Phalaropes I saw on Manito Lake in western Saskatchewan on 16 and 17 August 1975. Beaverhill Lake lies some 20 miles from Miquelon Lake. I have only seen Northern Phalaropes there in small numbers but other observers who have seen large flocks there inform me that these keep well out from the shore. Salt and Salt also state that these phalaropes more often alight well out on the water than they run about on the shore.² Given a strong preference of Northern Phalaropes when in flocks, for offshore waters which must, however, be shallow enough to suit the invertebrates on which they feed, the occurrence of flocks of these birds at Miquelon Lake

in years of low water levels but not at other times becomes explicable. The preference of these birds for offshore rather than inshore waters may have some as yet unknown ecological basis. However, I suspect it may be a mere psychological trait which is more pronounced in this species than in Wilson's Phalaropes.

If these phalarope flocks have a strong preference to remain a certain distance from the vegetated or "permanent" shoreline of lakes, waters that are sufficiently far out may well be shallow enough for their food requirements only when lake levels are low.

¹NYLAND, E. 1970. Miquelon Lake, Alberta. *Lands Forests Parks Wildlife* 13:18-25.

²SALT, W. R. and SALT, J. R. 1976. *The birds of Alberta*.

³WETMORE, cited from BENT, A. C. 1927. *Life histories of North American shore birds*. U.S. Natl. Museum Bull. 142, Washington.

TWENTIETH ANNUAL NESTBOX REPORT FROM BRANDON, MANITOBA

MRS. JOHN LANE, 1701 Lorne Avenue, Brandon, Manitoba R7A 0W2, and BARBARA ROBINSON, HAZEL PATMORE, MAMIE McCOWAN and BETTY SHANKLAND.

The "Friends of the Bluebirds" had another busy and interesting year in 1980.

Dr. R. C. Rounds, Department of Geography, Brandon University, introduced Mr. Hugh Munro, honor graduate of Brandon University during the March meeting held in the home of the co-ordinator, Mrs. John Lane. In the spring of 1980 Mr. Munro began a multi-faceted study on our bluebird nestlines towards a Master's degree at the University of Manitoba. With the co-operation of the "Friends of the Bluebirds" and with the use of records from the files of the late John Lane, an excellent start has been made.

Dr. Rounds and Mr. Munro have already written papers concerning fertility in albinistic eggs, a review of hybridization, and variation in clutch sizes. The first paper has been accepted by "Auk". The others have been submitted to scientific journals.

On 21 September the "Friends of the Bluebirds" met to present their reports for 1980. Some interesting observations were recorded.

Barbara Robinson (Camp Hughes and South Shilo lines) reported two successful hatchings in the same box of Mountain Bluebird white eggs — first clutch of 5 eggs and second of 4 eggs. Mr. and Mrs. Perry Hopkins of the Hartney area reported 6 Mountain Bluebird white eggs hatched in box No. 610. Betty Shankland, monitoring

the South Griswold line, had 5 Mountain Bluebirds hatch from white eggs in nest box No. 4181. On Old No. 1 Highway to Carberry, Hugh Munro reported two successful hatchings of Mountain Bluebirds from white eggs, 5 young in box No. 800 and 5 young in box No. 4344A.

Barbara Robinson's report also noted three nestings in natural cavities, one of the Eastern Bluebird in the Camp Hughes area and two of the Mountain Bluebird in the South Shilo area.

Peter Sawatzky (Carberry-Glenboro line) reported two unusual incidents. On 29 May, in nest box No. 612, he found 3 dead young Mountain Bluebirds and 3 eggs. There had been no nest built. Eggs had been laid on the bare wood of the box floor. Also for 29 May (nest box No. 929 containing 6 young Mountain Bluebirds), Peter's report reads, "One young with deformed bill, criss-crossed (like crossbills). The bird seemed quite healthy, but smaller than other young in nest."

The reason for many instances of dead young of Tree Swallows found in several areas is not known. We suspect prolonged rain resulting in lack of food or prolonged drought before the rain. There were a few reports of dead young Mountain Bluebirds.

On 3 July the Brandon Junior Birders, for the first time, watched

carriion beetles at work in three separate nest boxes (No. 23, No. 45 and No. 43) where dead young of Tree Swallows were found. This was on the low road to Shilo from Brandon.

On this nest line Black-capped Chickadees were found nesting in box No. 22 on 18 June. Barbara Robinson had one nesting of Black-capped Chickadees on the South Shilo line.

The summary of occupancy in nest boxes during 1980 is in Table 1. It is of interest that a nesting of the Northern Flying Squirrel was reported.

The major nestings of the Eastern Bluebird occur in sandy country, such as Barbara Robinson's Camp Hughes and South Shilo areas where she reported 21 nestings and in Hartney South where Mr. and Mrs. J. B. Thomas reported 7 nestings.

The largest total of Mountain Bluebird nestings on our extensive miles of nest lines was found in Mr. and Mrs. Jim Spear's area (Russell, Shellmouth, Churchbridge and valley). Mr. Spear reported 152 nestings of Mountain Bluebirds. Some of these, a small flock, were so tame they flew to Mrs. Spear and perched on her head.

On 28 September the beautiful sighting of a flock of 40 to 50 Eastern Bluebirds in fall migration near Treesbank was reported by Betty Shankland and party. Near the same

locality on 14 September they had seen a mixed flock of some 40 Mountain and Eastern Bluebirds.

This report is made possible by the volunteer work of the "Friends of the Bluebirds": from *Boissevain* — Mr. and Mrs. W. Moncur, Charles Reid; *Carberry* — Mr. and Mrs. Bob Anderson and family; *Erickson* — Mr. and Mrs. Keith Johnston, Melvin and Shirley, Mr. and Mrs. Arthur Koping; *Forrest* — Mrs. G. S. Parsons and 4-H Girls Glenda Parsons, Sharon Hansen and Melanie Miller; *Glenboro* — Peter Sawatzky; *Hartney* — Mr. and Mrs. Perry Hopkins, Mr. and Mrs. J. B. Thomas; *Headingly* — Mr. and Mrs. Carl Gompf, Jim and Jean Robson; *Killarney* — Mr. and Mrs. Lloyd Powell, Mrs. Vera Turner; *Miami* — Mr. and Mrs. Dale Robinson; *Miniota* — Mr. and Mrs. Jack Hanlin and grandchildren; *Napinka* — George T. Watson; *Neepawa* — Mrs. Fred Murray, Don and Ken, George Mossop; *Newdale* — Mr. and Mrs. Roy Everitt, Mr. and Mrs. Oran English; *Ninette* — Mr. and Mrs. Monroe Wright; *Oak Lake* — Rob and Heather Penner, Mr. and Mrs. Evan Baillie; *Russell* — Mr. and Mrs. Jim Spear; *Shoal Lake* — Cliff Findlay; *Souris* — Mr. and Mrs. Art Michie; *Tilston* — E. J. Jones; *Virden* — Mr. and Mrs. John Turton; *Wawanesa* — Ed Robinson; *Winnipeg* — Robert

Table 1. OCCUPANCY OF NEST BOXES IN THE BRANDON, MANITOBA AREA IN 1980.

Occupant	Number of nestings
Mountain Bluebirds	694
Eastern Bluebirds	41
Bluebirds not identified as to species	6
Tree Swallows	506
House Sparrows	111
House Wrens	40
Starlings	2
Black-capped Chickadees	2
Mice	9
Squirrels	2

Burch; *Brandon* — Mrs. Barbara Robinson, John and Marion Robinson, Mamie, Helen and Margaret McCowan, Hazel Patmore, Daisy and Muriel Patmore, Barbara Robertson, Dr. and Mrs. Richard Rounds and family, Mr. John Plum, Mr. W. For-

syth, Linda Muzyka, Marlene Brechka, David Randall, Ken James, Ken Leslie, Betty Shankland, May Tucker, Mrs. John Lane and Junior Birders Steven and Martin McFarlane, David Senchuk, David Voorhis, Heather Horton.



Mountain Bluebird nest and eggs.

Gary Seib

CALGARY AREA BLUEBIRD TRAILS — 1980

DON STILES, 20 Lake Wapta Rise SE, Calgary, Alberta T2J 2M9.

This article gives results for 1980, the second year in which members of the Calgary Field Naturalists' Society have been monitoring Harold Pinel's Calgary Bluebird Trail.^{1 2} In addition, results are given for trails of Andrew Stiles, Blake Stillings and a new section of trail west of Longview monitored by Kay Morck. The drop in houses monitored on Harold Pinel's trail from 309 last year to 205 this year

was due to dropping of certain sections which had primarily House Sparrows and Tree Swallows but no bluebirds, and also the incorporating of 55 houses into Blake Stillings' trail for convenience in counting.

Our schedule:

1. March or early April — Set up new houses. Cleaned out old houses and sprayed with a 10% creolin solution.

2. May 24 + 1 week — Counted Mountain Bluebird eggs.
3. June 15 + 1 week — Counted and banded bluebird young and counted Tree Swallow eggs.
4. July 4 + 1 week — Counted and banded Tree Swallow young and looked for second broods of bluebirds.
5. Early August — Made a last check of the nests to look for infertile eggs, dead young and late Tree Swallow broods.

These steps were generally followed except for number 5 which was done for only a small portion of the houses.

Table 1 gives an idea of the percen-

tage of bluebird and Tree Swallow nests, as well as some incidental information such as House Sparrow and wren nests, boxes used more than once (a good percentage of these were double broods of bluebirds), boxes vandalized and boxes not used.

1980 was the best bluebird year in the Calgary area since records have been kept (1973). This is believed due to a warm dry May which resulted in early nesting of the mountain bluebird and therefore more double broods than usual. About 25 May a strong spring storm passed through which did result in finding a few bluebird nests with dead young.

Table 1. CALGARY BLUEBIRD TRAILS — NESTING RESULTS 1980

	<i>Harold Pinel</i>	<i>West of Longview</i>	<i>Blake Stillings</i>	<i>Andrew Stiles Priddis Didsbury</i>	<i>Total</i>	
No. of Boxes	205	23	312	62	106	708
Miles of Line	128	21	130	40	60	379
No. of Mountain						
Bluebird Nests	56	12	86	56	30	235
Successful Nests	73	92	94	91	83	89
Eggs	292	75		290	158+	
Young Fledged	186	47	392	240	127+	992+
Clutch Size (Eggs)	5.21	6.25	Inc.*	5.17	5.27	Inc.
Young/Successful Nest	4.53	4.27	4.83	4.71	5.08	4.75
No. of Tree Swallow						
Nests	131	12	218	27	69	457
Successful Nests	83	67	96	96	94	91
Eggs	714	52	Inc.	137	372+	Inc.
Young Fledged	503	40	1174	128	335+	2180+
Clutch Size (Eggs)	5.45	4.33	Inc.	5.07	5.39	Inc.
Young/Successful Nest	4.61	5.00	5.62	4.92	5.15	5.23
House Sparrow Nests	23	0	20	2	9	54
Wren Nests	1	0	4	4	3	12
Boxes Used More Than						
Once	20	2	26	29	14	91
Vandalized	11	0	2	3	5	21
Boxes Not Used	6±	4	4	1	2	17+

*Incomplete data

Knowledge of the breeding range of bluebirds has been extended this year. Kay Morck has shown that bluebirds occur from six miles west of Longview to the Kananaskis road. No bluebirds are found on the north-south road from Black Diamond to Chain Lakes. Blake Stillings found bluebirds south of the Elbow River on a newly set up trail from the Trans-Canada Highway to Bragg Creek. It will be interesting to see if they are found north of the Elbow in subsequent years. Ann Machin and Betty Haines found two bluebird nests near Calgary this year although none were found last year. Betty Haines has bluebirds nesting in her backyard on Bearspaw Road north of the 1A highway. This may represent an eastern "island" of bluebird nesting as the bluebird trails show no bluebirds in the immediate Cochrane area.

In general, bluebirds are found near the following settlements: Millarville, Priddis, Bragg Creek, southwest of Calgary, Bottrell, Water Valley, Cremona, Sundre, and east of Didsbury. Nearly all houses not occupied by bluebirds have Tree Swallows in them, with an occasional house occupied by wrens and some by House Sparrows, the enemy of the bluebird and Tree Swallow.

Banding: No banding was done in 1980 since no biologist with a banding permit was available. Six band recoveries were made by Don and Andrew Stiles. Two were bluebirds banded as adults by Martin McNicholl in 1979 in the Priddis area. Both were using the same nest they were banded in. Also two Tree Swallows banded by Martin McNicholl in 1979 in the Priddis area were recovered, one in the same nest and one 2½ miles away. Finally two Tree Swallows banded by Harold Pinel in the east Didsbury area were recovered. One was banded in 1977 as an adult and recaptured 3

miles away. The second was banded as a young in 1976, recaptured in 1978, 12 miles away and in 1980 recaptured 3 miles from the 1978 location. This instance lends further support to the theory mentioned by Harold Pinel that young birds tend to disperse but adult birds tend to return close to their home territory.¹ Of the latter two birds recaptured, one was known to be four years old, and the other at least four years old.

Highlights: Blake Stillings claimed several interesting happenings for the year. He found one nest where Tree Swallows had raised 5 Tree Swallows and one bluebird. In another nest he noticed that one Tree Swallow had hatched earlier than the others. He noticed some Tree Swallow nests where the birds were just hatching and happened to monitor them again as they were just fledging and calculated the hatching to fledging time to be 19 to 20 days.

He had one nest with 9 wren young which fledged. He had one chickadee nest which was unsuccessful. This is the first time in several years that a chickadee nest has been reported.

Don Stiles found one nest near a farm which was a good example of House Sparrow depredation. On 31 May this house had 4 House Sparrow eggs and one dead Tree Swallow in the bottom. The nest was cleaned out and on 17 June the House Sparrows were again building a nest but this time there was a dead male bluebird and a dead Tree Swallow in the bottom. The top was left off this nest for the remainder of the season to prevent further recurrences.

¹PINEL, H. W. 1980. Reproductive efficiency and site attachment of Tree Swallows and Mountain Bluebirds. *Blue Jay* 38(3): 177-183.

²STILES, D. J. 1980. Calgary Area bluebird trails — 1979. *Blue Jay* 38(3): 184-185.

WANTED: RED-NECKED GREBE NESTING LOCATIONS

Although the Red-necked Grebe is one of the largest and most spectacular of parkland lake inhabitants, little is known concerning its status across the Canadian Prairies. The species is a regular on *American Birds* "Blue List", an account of North American species exhibiting non-cyclical population declines across most or all of their range. Despite this, the species has barely been studied in North America. For these reasons, I became interested in the species, and am currently conducting a nesting ecology and productivity study of Red-necked Grebes within Turtle Mountain Provincial Park.

Within the next few months I will be preparing a report assessing Red-necked Grebe population levels in Manitoba and surrounding areas. This is intended to give an overall picture of their distribution and status in the Prairies. Anyone who has information on breeding locations of any Red-necked Grebe pairs is asked to contact me. Of particular interest is whether these pairs have inhabited



Red-necked Grebe.

K. de Smet

this area for several years and if these populations appear to be decreasing or increasing. Any information on habitat characteristics and breeding success would also be appreciated.

Please send any information you might have to: Kenneth De Smet, Department of Biology, Box 8328, University Station, Grand Forks, North Dakota 58202.

PHOTOGRAPHS REQUIRED

The *Blue Jay* is always in need of photographs to illustrate articles for which the author is unable to supply pictures. We would like to establish a list of persons who would be willing to allow their photographs to be published in the *Blue Jay*. It is our hope to be able to mail a list of types of photographs required for each issue about two months before the *Blue Jay* would be printed. If you are interested in having your name on the list please notify us before April 1, 1981, as we hope to begin the list with the June issue.

As the S.N.H.S. operates on a non-profit basis, we regret that funds are not available to pay contributors for their work.

LATE SUMMER ACTIVITY OF SMALL-FOOTED, LONG-EARED AND BIG BROWN BATS IN DINOSAUR PARK, ALBERTA.

DAVID B. SCHOWALTER^a, Alberta Fish and Wildlife Division, P. O. Box 8070 Stn. 'F', Edmonton, Alberta.

ANNE ALLEN^b, Alberta Culture, Provincial Museum of Alberta, 12845-102 Ave., Edmonton, Alberta T5N 0M6.

Small-footed bats (*Myotis leibii subulatus*) occur widely in the badlands and arid river valleys of southern Alberta and probably Saskatchewan.⁴ Little is known of the life history of the species there or elsewhere.¹ Therefore the capture of a number of small-footed bats in Dinosaur Park, Alberta, with long-eared bats (*Myotis evotis*) and big brown bats (*Eptesicus fuscus*) is of some interest. On 20 August 1979 we captured bats at an abandoned garage at the old Stevesville Ferry site in the north end of the park; the garage is used by bats only during the night. We captured two adult female and one adult male small-footed bats as well as a little brown bat (*Myotis lucifugus*) and a big brown bat. Similar use of buildings by small-footed bats as night roosts has been noted in Colorado and is common behavior elsewhere among other bat species.

On 21 August 1979 we found a little brown bat in the awnings of the warden's cabin at the park headquarters and another in a small cavern in the badlands. That night we captured 22 small-footed, 4 long-eared and 2 big brown bats in a mist net placed at the entrance to another cavern. Many more small-footed bats were present but, as others have observed,¹ they appeared to detect

the net and turn away. Small-footed bats are extremely slow flyers which likely allows them time to avoid the net at close quarters.

Most bats of the bat family (Vespertilionidae) present in Alberta and Saskatchewan have similar reproductive cycles. In the northern hemisphere most mating takes place in September, though this occurs to a varying extent later as well. The females store the sperm over the winter; ovulation and fertilization occur in the spring. Testes are largest in late July and early August, most sperm production occurring in the latter month. During August the sperm is stored in the epididymides which enlarge. Sperm production has ceased by the time of breeding and the testes are smaller. In the mountains of Alberta, and possibly other northern and colder regions, the timing of these events may be somewhat compressed compared to areas of more moderate climate where bat reproduction has been examined in detail.⁵

Reproductive organs of the bats collected for the Provincial Museum of Alberta were examined to determine the breeding condition. Table 1 shows some measurements of reproductive organs of male small-footed bats captured 21 August in

Table 1. TESTES AND EPIDIDYMIDES MEASUREMENTS^a OF ADULT AND JUVENILE MALE SMALL-FOOTED BATS FROM DINOSAUR PARK, ALBERTA, 21 AUGUST 1979.

Age group	Testis diameter	Cauda epididymidis diameter	Cauda epididymidis length	No. bats
Adult	2.0±0.5, 1.8-2.5	2.0±0.1, 1.7-2.5	3.7±0.9, 1.8-6.0	5
Juvenile	1.5±0.3, 1.1-1.9	1.5±0.2, 1.0-2.0	2.0±0.6, 1.4-3.0	16

^amm — Mean ± S.D., Range

Dinosaur Park. Only one adult male appeared to be in breeding condition; his testes (1.8 mm) were the smallest of the adult males and no sperm were found in them; the cauda epididymides were the largest (5.3 and 6.0 mm) of the males. He was, as well, the heaviest (7.1 g) of the small-footed bats captured. The other adult males had not reached breeding condition. Active sperm manufacture was still occurring in the testes and, if size of the epididymides is a reliable indication, they had stored considerably less sperm than the largest male. Juvenile male testes were smaller than those of adults, the smaller bats generally having the smallest testes. No evidence of sperm was detected among the juvenile

males. Weights of juvenile males averaged considerably less than adult males (Table 2).

Visual examination of the nipples and reproductive tracts of female small-footed bats showed three of the five adults to have suckled young. Those three, and one of the adults which had not suckled young, had enlarged right uterine horns; the remaining adult and the four juveniles examined had smaller, nearly symmetric uteri. The larger asymmetric uteri probably indicated that those bats had been pregnant with a single fetus. Sperm could not be found in the tracts of the females, however, that was not unexpected as only one male appeared to be in breeding condition.

Table 2. WEIGHTS^a OF SMALL-FOOTED BATS CAPTURED 21 AUGUST 1979 IN DINOSAUR PARK.

Adult		Juvenile	
Male	Female	Male	Female
Weight 6.0±0.9, 4.9-7.1(5)	5.8±0.3, 5.3-6.1(5)	4.5±0.3, 3.9-4.9(8)	4.8±0.2, 4.9-5.1(4)

^ag — Mean ± S.D., Range (number of bats)



Dinosaur Provincial Park, Alberta.

Wayne Lynch

Fall reproductive activity of male small-footed bats may be like that of little brown bat males at Cadomin Cave.⁵ There, little brown bat juvenile males are not reproductively active; they weigh considerably less than adult males, which are even heavier than many adult females (which are larger bats) at the beginning of the breeding season. Fall breeding in that species evidently involves considerable weight loss as adult male little brown bats enter hibernation weighing considerably less than earlier in the fall. Juveniles continue to gain weight. That the juvenile small-footed bats we collected were not reproductively active and that the heaviest bat was the only male in breeding condition suggests a parallel situation with that described for those little brown bats; however, this can not be definitely determined on the basis of a single collection. Long-legged bat (*Myotis volans*) adult and juvenile males at Cadomin Cave gain weight through the fall and both ages are reproductively active.⁵ We have also found that among a small sample of big brown bat juvenile males collected in fall, the heavier individuals are coming into, or are in, breeding condition while the lighter ones do not appear likely to breed. Thus all or some of the juvenile male small-footed bats could breed in their first year, although they would necessarily come into breeding condition later than the adults as none we collected showed evidence of advanced production of sperm.

We have captured small-footed bats throughout the summer in southern Alberta and the species undoubtedly gives birth in Dinosaur Park as they do in similar habitat in South Dakota.⁷ They may also hibernate there as small-footed bats are noted to be extremely cold tolerant during hibernation¹ and the species hibernates in south-central Montana.⁶ It is likely that some of the cracks in

the park badlands go in beyond the frost line and may provide suitable hibernacula.

We would like to thank Jim Bahr and Karen Cosby for showing us the location of the cave in Dinosaur Park and first noting the bats there. The warden and park naturalists of Dinosaur Park assisted our efforts and Provincial Parks and Recreation issued permits to collect in the park.

¹BARBOUR, R. W. and W. H. DAVIS. 1969. Bats of America. The University Press of Kentucky, Lexington.

²GUSTAFSON, A. W. 1979. Male reproductive patterns in hibernative bats. *Journal of Reproduction and Fertility* 56:317-331.

³RACEY, P. A. and W. H. TAM. 1974. Reproduction in male *Pipistrellus pipistrellus* (Mammalia:Chiroptera). *Journal of Zoology (London)* 172:101-122.

⁴SCHOWALTER, D. B. 1979. Notes on the distribution of bats in Alberta and Saskatchewan. *Blue Jay* 37(3):179-187.

⁵SCHOWALTER, D. B. 1980. Swarming, reproduction, and early hibernation of *Myotis lucifugus* and *M. volans* in Alberta, Canada. *Journal of Mammalogy* 61(2):350-354.

⁶SWENSON, J. E. 1970. Notes on distribution of *Myotis leibii* in eastern Montana. *Blue Jay* 28(4):173-174.

⁷TUTTLE, M. D. and L. R. HEANEY. 1974. Maternity habits of *Myotis leibii* in South Dakota. *Bulletin of Southern California Academy of Sciences* 73(2):80-83.

aPresent address: Alberta Culture, Archaeological Survey of Alberta, Old St. Stephen's College, 8820 112 St., Edmonton, Alberta T6G 2J6.

bPresent address: Department of Anthropology, University of Alberta, Edmonton, Alberta T6G 2E2.

SASKATCHEWAN CHRISTMAS MAMMAL COUNT — 1980

Compiled by WAYNE C. HARRIS, Box 93, Raymore, Saskatchewan S0A 3J0

A total of 45 counts were submitted this year, recording 28 species during the count period. The number of counts is a record high and the number of species ties the high set in 1978.

The lack of snow in some localities resulted in a reduction in number of species from these areas, while in other areas the limited snow meant easier access and probably better counts than usual.

Population trends of most species were stable. Red Fox numbers were lower than usual although similar to last year. Coyotes were also slightly down. Snowshoe Hare numbers were similar to last year but White-tailed Jack Rabbits appeared to be down slightly. Pronghorn Antelope were also lower than usual. The unseasonably warm weather and lack of snow probably accounted for the presence of ground squirrels at

Spring Valley and Eastend.

Some of the highlights of this year's count included a Raccoon and Fox Squirrel from Regina, a pack of ten Timber Wolves feeding at a kill site in Prince Albert National Park and over 90 Elk at Fort Walsh in the Cypress Hills.

For weather, coverage and participants of these counts please refer to the Christmas Bird Counts found elsewhere in this issue. Symbols found in the Table are as follows:

- * Identified by tracks with the estimated number of animals in parentheses.
- + Seen during count period but not on count day.
- L Active lodges seen with the number in parentheses.
- D Freshly dead animals found with the number in parentheses.
- H Species heard but not seen with number in parentheses.



White-tailed Deer.

Hans de Vogel

Table 1. SUMMARY OF CHRISTMAS MAMMAL COUNTS

SPECIES	LOCALITY	ASSINIBOIA January 4	BATTLEFORD December 26	BIGGAR December 24	BIG GULLY CREEK January 1	BROADVIEW December 24	COLD RIVER December 28	DALMENY December 31	EASTEND December 29	EASTEND January 2	ENDEAVOUR January 4	FT. QU'APPELLE December 29	FT. WALSH December 21	GARDINER DAM December 22	GOVENLOCK December 20	GRENFELL January 4	HAFFORD December 21	HARRIS December 29	HUMBOLDT December 31	INDIAN HEAD December 21	KELVINGTON December 22	KENASTON December 28	KUTAWAGAN L. December 23	LAST MTN. L. December 24
Shrew sp.					*(2)											*(2)	*(1)							
Raccoon																			+				1	
Red Fox					*	*(4)																		
Coyote					3	2			*(1)	1	*(1)		7	1			*(3)		+	5	2		*	*
Timber Wolf																								
Ermine								1																
Least Weasel						*(1)											*(1)							
Long-tailed Weasel						*(1)															2			
Weasel sp.			*(2)		*								*(1)	*(1)										
Mink					*	*(2)																		
Striped Skunk																					*(1)			
Badger																								
White-tailed Jack Rabbit				2	*	*(33)		3	1	4	2		4	*(5)	*	*(2)	1	2	1	3	3	2	11	9
Snowshoe Hare	1	1		*	1	2					1	1	3	1		*	1		4	15	2	1	*	
Nuttall's Cottontail									2				5	1										
Rich. Ground Squirrel										1														
Ground Squirrel sp.																								
Red Squirrel		2			7	2	2			1		15	46+				*(1)		+	6	1			
Fox Squirrel																								
Beaver																L								
Meadow Vole										*(2)		1										1		
Deer-Mouse							*									*				*(2)				
Mouse sp.																			+		*(1)			
Muskrat							1																	
House Mouse												1												
Porcupine		1			*			2	+			0(1)	1	1		*		2	*(2)	*(1)				
Elk													90+	27										
Mule Deer									5	2			8											
White-tailed Deer	9	6	4	*	*(27)	2	*	1	2	*(5)	*(30)	63	2		*		*(3)	3	3	21	3	3		2
Deer sp.				*																				
Moose										*(1)			3											
Pronghorn Antelope																								
TOTAL SPECIES	2	4	2	0	10	5	4	4	6	5	5	6	11	0	0	0	7	6	0	7	0	5	0	4

SPECIES	LOCALITY														TOTAL NO. COUNTS PER SPECIES OR GROUP
Shrew sp.	LEADER	December 28													4
	LOON LAKE	December 25													1
Raccoon	LUSELAND	December 26													16
Red Fox	MACDOWELL	December 30													26
Coyote	MAIDSTONE BR.	January 2													1
Timber Wolf	MOOSE JAW	December 26													1
Ermine	PRINCE ALBERT	December 26													1
Least Weasel	PRINCE ALBERT	December 28													4
Long-tailed Weasel	PRINCE ALBERT	January 4													8
Weasel sp.	PRINCE ALBERT NATL. PARK	January 4													13
Mink	RAYMORE	December 25													6
Striped Skunk	REGINA	December 26													2
Badger	ST. WALBURG	December 26													2
White-tailed Jack Rabbit	SASKATOON	December 26													2
Snowshoe Hare	SCOTT	December 30													34
Nuttall's Cottontail	SKULL CK.	December 26													31
Rich. Ground Squirrel	SPIRIT LAKE	December 25													5
Ground Squirrel sp.	SPRING VALLEY	December 25													1
Red Squirrel	SQUAW RAPIDS	December 27													1
Fox Squirrel	WHITE BEAR	December 26													22
Beaver	WHITEBEECH	December 27													1
Meadow Vole	WOLSELEY	January 4													5
Deer Mouse															10
Mouse sp.															1
Muskrat															12
House Mouse															2
Porcupine															1
Elk															18
Mule Deer															5
White-tailed Deer															91
Deer sp.															35
Moose															3
Pronghorn Antelope															6
TOTAL SPECIES															1

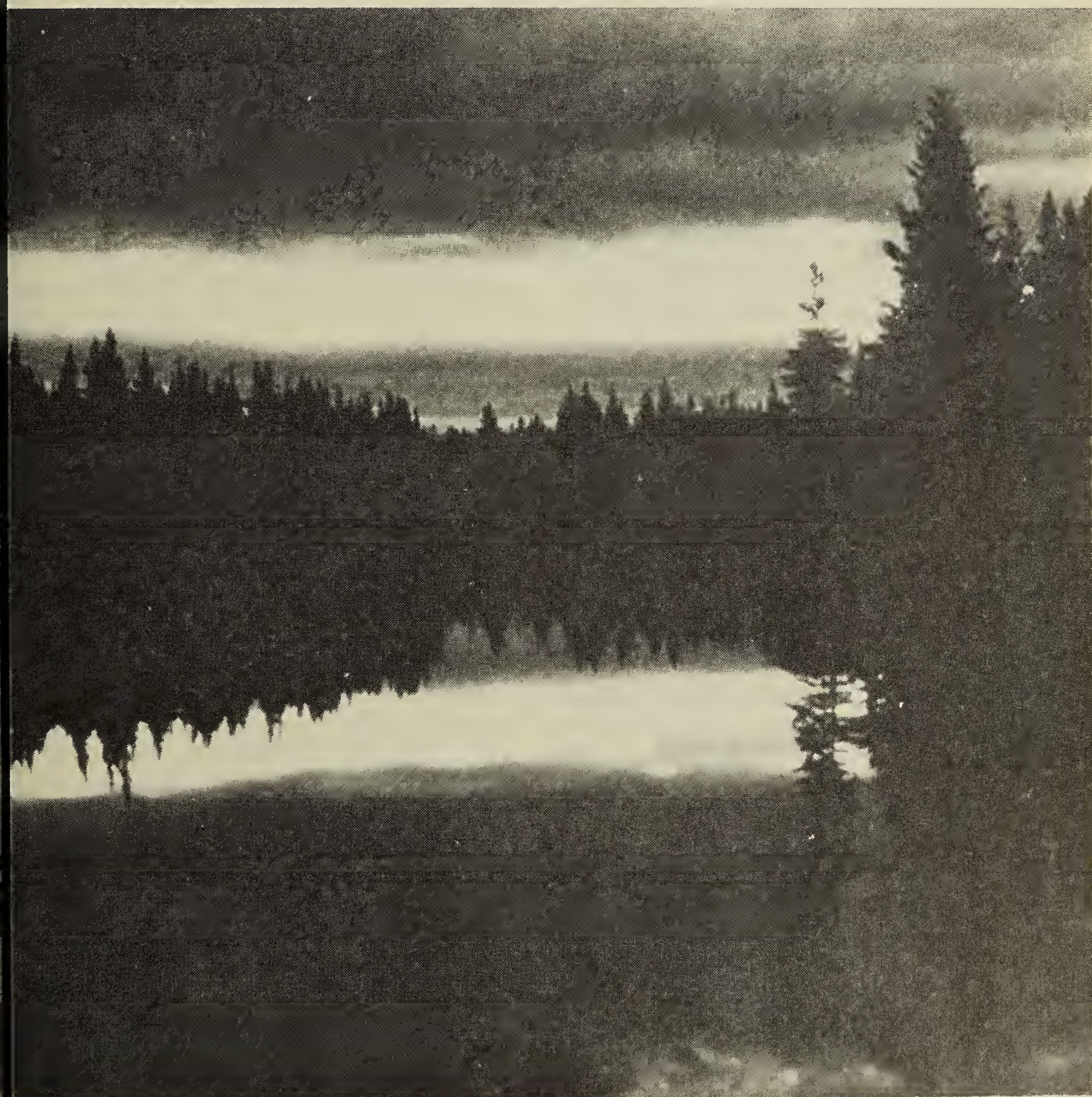
CHRISTMAS MAMMAL COUNT — ROUND LAKE, 1 JANUARY 1981

The following count was received too late to include in the table. It adds one species not seen on any other count — a Lynx.

Red Fox *(2); Coyote *(1); Lynx *(1); Long-tailed Weasel *(1); Striped Skunk 1; Snowshoe Hare 23; Red Squirrel 2; Mouse sp. * (5); Muskrat 1; Porcupine 1. — *Doug Francis*. (This count is Broadview "b" in Christmas Bird Count.)

SUMMER MEETING AT WASKESIU LAKE, SASKATCHEWAN

The 1981 annual summer field meeting will be held at Waskesiu Lake, in Prince Albert National Park, Saskatchewan on 5-6 June, 1981. Guided trips and illustrated talks will help naturalists to become familiar with Saskatchewan's only National Park. Details of the meeting arrangements will be published in the Spring issue of the SNHS Newsletter.



Prince Albert National Park, Saskatchewan.

J. B. Gollop

NATURE LIBRARY

THE GREAT GRAY OWL — PHANTOM OF THE NORTHERN FOREST

ROBERT W. NERO. Photographs by
ROBERT R. TAYLOR. 1980.
Washington, Smithsonian Institution
Press. 168 pp. \$20.95.

Throughout recorded history, owls have held an unusual fascination for man, disproportionate to their numbers. Bob Nero has chosen to write about perhaps the most enchanting owl of all, and the "sixth most wanted bird" that members of the American Birding Association would like to add to their life lists.

The Great Gray Owl for years was thought to be one of the rarest of western Canada birds. As a species in risk of extinction, it was considered second only to the Whooping Crane. When Nero moved to Winnipeg in 1966 he had never seen a Great Gray Owl. He has since proved that this most beautiful of owls is not as rare as everyone had thought; in some areas of the mixed forest, especially east of Winnipeg, it is actually the commonest owl!

The book opens with Nero's visit to the second recorded Manitoba nesting site of the Great Gray Owl near The Pas, and then tells what a thrill it has been for others to see their first Great Gray. It continues with accounts of Great Gray visits to the residential area of Winnipeg, the exciting refinement of winter capture techniques, the history of the species in North America, and a description of

the bird and its voice. Life history chapters then include: how it captures mice and voles after hearing them beneath the snow by plunging deeply into the snow; its enemies; courtship and pair formation; nesting; nest habitat and nest sites. The book concludes with chapters on artificial nest platforms, and on future threats to the species posed by draining of bogs, removal of peat, and logging of tamarack.

Each of these 13 chapters begins with an introductory essay which sets the mood. We may expect to encounter these again in future anthologies.

Nero has searched the literature thoroughly, and quotes appropriately from many observers. He tells how the first Great Gray Owl specimen was sent back to England by Andrew Graham from Severn River post on Hudson Bay in 1771, and how Dr. John Richardson found the first nest at Great Bear Lake in 1826. He tells of the nests found during this century at Belvedere, Alberta, by A. D. Henderson, and of others in northern Sweden.

In many aspects of human endeavour, those things done for love may be more richly rewarding than those done for money. This book is such an endeavour. Although Nero is employed during the week as a research scientist with the Manitoba Department of Natural Resources, and his assistant Herb Copland is an employee of the Manitoba Museum of Man and Nature, only an obsessive love of their subject could have driven this pair out in all sorts of weather, for

the whole weekend, every weekend, all winter, with few exceptions, to study at their own time and expense a little known species.

The results are impressive. The first Great Gray Owl was banded in 1947 in Toronto, and as recently as 1956 I was proud to be the third person on the continent to band this species. In contrast, Nero and Copland banded 88 Great Gray Owls in the winter of 1978-9 and then another 22 in the 1979 spring nesting season, for a total of 110 banded in eight months.

The book contains very few errors. The year of Oeming's thesis and the article by Kapten Wahlberg are omitted from the references; Aylmer, Ontario, is misspelled.

The book is dedicated to John T. Mullen, Jr., Nero's senior professor who supervised his thesis on Red-winged Blackbird behaviour between 1948 and 1953. There is an appropriate foreword by George E. Ratson, curator of birds at the Smithsonian.

This is probably the most beautiful book ever published about a single bird species. It is a superb example of how to present the results of intensive research in an interesting manner for layman and scientist alike.

And the photography! Robert R. Taylor of Winnipeg has again demonstrated that he is one of the continent's leading wildlife photographers. No less than 30 of his color photographs and 57 of his black-and-white photographs are included in this book. Every aspect of this magnificent owl is portrayed in word and picture, a sumptuous and unsurpassed visual feast.

The Smithsonian Institution Press deserves accolades for their unflinching efforts to produce this fine book. It will be read for pleasure and for information, but in addition it cannot help sensitizing each reader to

ecologic relationships and the conservation ethic. Well done, Bob! — Reviewed by C. Stuart Houston, 863 University Drive, Saskatoon, Saskatchewan S7N 0J8.

A FIELD GUIDE TO THE BIRDS EAST OF THE ROCKIES

R. T. PETERSON. 1980. Houghton Mifflin, Boston. 384 pp. \$12.95 paperback; \$21.00 hard cover.

This is the best field guide for its region ever published. The only problem is that the region is not quite as claimed on the cover of the paperback — east of the Rockies — or as stated on the title page — eastern and *central* North America. Nor is the western boundary an ecological one as claimed on page 8. The book is, in fact, a complete revision of Peterson's eastern guide, concentrating on birds east of the 100th meridian — 60 miles east of the Saskatchewan-Manitoba border. So, how good is it for the Prairie Provinces?

It includes about 90% of the birds found in Alberta (missing 31 species) and almost 95% of Saskatchewan species (23 omitted). Those missing are mainly birds associated with the Cypress Hills, foothills and mountains. Six Manitoba species are omitted.

The 34 Prairie Province species that I found missing are (A = Alberta, S = Saskatchewan, M = Manitoba): Trumpeter (AS) and Bewick's Swans (S), Blue Grouse (A), White-tailed Ptarmigan (A), Sage Grouse (AS), Chukar (AS), Common Crane (A), Mountain Plover (AS), Wandering Tattler (A), Sharp-tailed Sandpiper

(AS), Glaucous-winged Gull (A), Ancient Murrelet (M), Band-tailed Pigeon (AS), Pygmy Owl (A), Black Swift (A), Calliope Hummingbird (AS), Lewis' Woodpecker (ASM), Williamson's Sapsucker (AS), Hammond's (A), Dusky (AS), and Western (A) Flycatchers, Western Pewee (ASM), Violet-green Swallow (ASM), Steller's Jay (AS), Clark's Nutcracker (ASM), Mountain Chickadee (AS), American Dipper (AS), Bendire's (S) and Sage (AS) Thrashers, Townsend's (AS) and MacGillivray's (AS) Warblers, Cassin's (A) and Gray-crowned Rosy (ASM) Finches, and Brewer's Sparrow (AS).

What about the illustrations? There are 136 plates in this book compared to 60 in the western Peterson and 157 in Robbins (which covers all of North America).^{3 5} Table 1 compares the number of illustrations for six of the larger, more common or more difficult groups of Prairie Province species in the three guides. While the Robbins guide is more complete and more profusely illustrated, its colour reproduction is often poor, in my experience.

The new plates, most with four to six species each, permit larger figures and more detail. The plates still have the advantage over Robbins of using arrows to point out diagnostic field marks. All the pictures are in colour except for eleven plates of waterfowl, shorebirds and diurnal birds of prey — all flying — most of which are also

shown in colour on other plates. Colour reproduction is excellent. However, before buying this new guide check pages 153 (accipiters) and 221 (bluebirds); in some copies these plates, at least, are paler than others. It may be that in all copies the phoebe-pewee plate appears to be too gray. The last seven plates depicting 99 accidentals from around the world (but not from western North America) and aviary escapees.

Some species are depicted differently than in the western Peterson, e.g., head pattern of the winter Eared Grebe and the amount and size of spotting on Swainson's and Gray-cheeked Thrushes (an improvement). The inclusion of a young Chipping Sparrow is good but the omission of an immature White-throat is unfortunate. Also not included are different forms of Red-tailed and Ferruginous Hawks as seen from below.

Another improvement is that the text now faces the illustrations, as in Robbins. It still contains information on description, similar species, voice, world-wide range and habitat, condensed to about half that of the western Peterson; nest data are omitted. Because of their nature and because people hear them differently many bird songs are difficult to describe in words. I have listened to recorded calls of Boreal Owls from Sweden², Germany¹, and Edmonton (R. E. Gehlert, personal tape) — all similar — but I could not have identified

Table 1. COMPARISON OF ILLUSTRATIONS IN THREE FIELD GUIDES.

Group	No. of species illustrated			No. of different illustrations		
	Western	Eastern	Robbins	Western	Eastern	Robbins
Waterfowl	37	38	38	184	292	289
Hawks - eagles	19	20	20	67	109	104
Shorebirds	39	41	44	103	178	187
Gulls	13	17	16	28	84	68
Warblers	26	33	35	44	101	157
Sparrows	20	19	20	31	37	60

ed them from Peterson's description
a "high-pitched bell or dripping of
water" or "ting-ting-ting . . .". The
Handbook of British Birds does a
much better job: "repetition (2-3 secs)
a single . . . musical note . . . 'poo-
poo-poo-poo . . .'," which description
largely repeated in Peterson's
European bird guide.^{7 4}

Another innovation is the addition
390 maps for breeding, migration
and wintering ranges *east of the 100th
meridian in North America*. With only
x per page, the maps have the ad-
vantage of showing state and provin-
cial boundaries. For some species
nesting only in the Arctic, breeding
ranges are shown almost to the
Arctic. The map section is of little use
for birdwatchers in Alberta and
Saskatchewan but is excellent for
Manitoba. A comparison of Peter-
son's Manitoba breeding ranges with
those in *The Birds of Alberta* shows
major differences only for Great Blue
Heron, Black Duck, Golden Eagle,
Sandhill Crane, Magnolia Warbler,
Rusty Blackbird and Rose-breasted
 Grosbeak.⁶ There are no maps for
California Gull and Mountain
Bluebird.

This paperback is well bound, con-
tributing to its cost. However, it will
not fall apart like so many soft-cover
Robbins'. There is a good introduc-
tory chapter on identifying birds, in-
cluding three cautionary paragraphs
on sight records. Omitted from the
"field list" provided at the front of the
book are Prairie Falcon, Red-headed
Woodpecker, Green-tailed Towhee
and Golden-crowned Sparrow.

One possible drawback is the se-
quence of plates — from swimming
birds to waders to terrestrial species.
Some parts of this arrangement are dif-
ficult to understand: cormorants and
grebes are 38 pages apart; coots
and gallinules occupy a plate in the
middle of waterfowl but not adjacent to
similarly coloured scoters; grouse

precede birds of prey; longspurs and
juncos are just before cardinals and
other colourful finches. Why are
shrikes not on the same page as
mockingbird and solitaire? The index
may be the fastest way to find some
species for a while.

Then there are some birds' names.
"Common Egret", used in both the
western Peterson and Robbins, does
not appear in the new guide; it is the
"Great Egret". Marsh Hawk appears
as Northern Harrier. Slate-colored
and Oregon Juncos which were com-
bined into Dark-eyed Juncos a few
years ago are listed here as Northern
Juncos. Short-billed and Long-billed
Marsh Wrens become Sedge and
Marsh Wrens, respectively. There are
other, more easily interpreted,
changes.

In spite of the above criticisms, if
you can live without the missing
species, you will find that this is the
best field guide for Canadian birds
east of the Rockies. — Reviewed by
Bernard Gollop, Canadian Wildlife
Service, 115 Perimeter Road,
Saskatoon, Saskatchewan S7N 0X4.

¹HARDY, J. W. 1980. Voices of New World
nightbirds. Owls, nightjars and their
allies. Bioacoustic Archive, Florida
State Museum, Gainesville, Fla. (12"
LP).

²KELLOGG, P. P. 1975. A field guide to
western bird songs. Houghton Mifflin,
Boston. (Cassette 1, Side B).

³PETERSON, R. T. 1969. A field guide to
western birds. Houghton Mifflin,
Boston. 366 pp.

⁴PETERSON, R., G. MOUNTFORT and P.
A. D. HOLLAND. 1974. A field guide to
the birds of Britain and Europe.
Collins, London. 344 pp.

⁵ROBBINS, C. S., B. BRUNN and H. S. ZIM.
1966. A guide to field identification —
birds of North America. Golden
Press, New York. 340 pp.

⁶SALT, W. R. and J. R. SALT. 1976. The
birds of Alberta with their ranges in

Saskatchewan and Manitoba. Hurtig, Edmonton. 498 pp.

⁷WITHERBY, H. F., F. C. R. JOURDAIN, N. F. TICEHURST and B. W. TUCKER. 1943. The handbook of British birds. Vol. 2. Witherby, London. 368 pp.

BIRDER'S GUIDE TO SOUTHEASTERN MANITOBA

NORMAN J. CLEVELAND, CALVIN W. CUTHBERT, GORDON D. GRIEF, GEORGE E. HOLLAND, PHILIP A. HORCH, RICHARD W. KNAPTON, RUDOLF F. KOES, NANCY F. MURDOCH, WAYNE P. NEILY, and IAN A. WARD. 1980. Eco Series No. 1, Manitoba Naturalists Society, 214, 190 Rupert Avenue, Winnipeg, Manitoba R3B 0N2. 5½x8½, 58 pp., paperback, \$4.95.

The front cover carries a charming painting, in colour, of a Connecticut Warbler by R. F. Koes and, on the back cover, there is a fine colour photograph of a Black-backed Three-toed Woodpecker by Denis Fast. Andy Lindsay and Phil Horch have contributed several black-and-white photographs to enhance an attractive publication.

An addition to the increasing number of "where-to-go-and-bird" guides being published these days, this one will be a tremendous boon to visitors to southeastern Manitoba intent on sampling the rich avian fare to be found there. Ten pages are devoted to descriptions of such birding Meccas as Delta Marsh, Oak Hammock Marsh, Victoria Beach, Assiniboine Park, La Barrière Park, and St. Adolphe Bridge (for hawks). Directions are given for reaching the sites, the best places for birds, and

some of the birds to be seen. The maps by Ian Ward are to be appreciated.

The area between Winnipeg and the Ontario-Manitoba boundary generally described as the Boreal Forest — is a major birding region and thus receives five pages of detailed directions. The regions north and south of the Trans-Canada Highway are described as Eastern Routes One and Two respectively.

Eastern Route One covers about 332 km (206 miles) but there are several tempting side trips offered with delectable lists of birds. A considerable stretch goes through Whiteshell Provincial Park with shorter parts of the route through Agassiz and Sandilands Provincial Forests.

Eastern Route Two is 400 km (248 miles) and is a different kind of operation. The authors warn birders to fill gas tanks and take food and insect repellent as service stations and restaurants are scarce, especially along Route Two. The latter Route takes one into Northwest Angle Provincial Forest in the extreme southeastern corner of Manitoba, and back through Sandilands Provincial Forest. The "Manitoba Vacation Guide 1980-81" (available from the Tourism Branch, 200 Vaughan Street, Winnipeg, Man. R3C 1T5) lists hotels or motels at Hadashville (at the start of Route Two), Sprague and Vass (near the U.S. Boundary), though nothing until Steinbach, 46 km from Winnipeg. This is in contrast to the accommodation to be found on Route One, which is relatively plentiful.

While it may be all right for Manitobans to zip through the Route in one day each, strangers from the prairies of "Outer Canada" should surely take two days for each Route since the birds, wildflowers, and other facets of natural history promise to

ndlessly fascinating. For example, this is Great Gray Owl country, immortalized by Bob Nero in his book *The Great Gray Owl: Phantom of the Northern Forest* (1980, Smithsonian Institution Press, \$21.00). If one is not ed to Winnipeg it seems to me that a ase in one of the two 4-star hotels at adashville, or further west at Falcon lake or in Whiteshell Provincial Park, ould enable one to drive the best of ne two Routes as a Figure 8 — ascinating thought!

The remainder of the book escribes such "Summer Specialties" s Black Duck, Goshawk, Yellow Rail, Woodcock, Whip-poor-will, Yellow-throated Vireo, Golden-winged Warbler, Northern Parula, Pine Warbler, Connecticut Warbler, Orchard Oriole, Scarlet Tanager, Inigo Bunting; "Fall and Winter Specialties" include Spruce Grouse, Turkey, Hawk Owl, Great Gray Owl, boreal Owl, Black-backed and orthern Three-toed Woodpeckers, oary Redpoll, Smith's Longspur. The species list" is illustrated with bar aphs by Gordon Grief.

Whatever your interest, by all eans buy a copy of *Birder's Guide to outheastern Manitoba* — you will nd it to be an invaluable aid. — eviewed by *Frank Brazier*, 2657 ameron St., Regina, Saskatchewan T 2W5.

PENGUINS

DOGER TORY PETERSON. 1979. oughton Mifflin Company, Boston, ass. 238 pp. \$25.00.

This beautifully illustrated book by e of the world's most honoured aturalists is a delight to read. ofusely illustrated with his beautiful

photographs and delightful sketches, it is easy reading and the reader is not burdened with a lot of figures and statistics.

Peterson tells us that penguins are his favourite family of birds. He has made a dozen or more expeditions to study and observe all 17 species in their natural habitats, which range from the ice-fields of Antarctica to as far north as the Galapagos Islands on the equator.

All species are nicely portrayed on the inside covers, distinctively showing the field marks for separating some of the species. The species are grouped in six genera as follows: Jackass or Harlequin Penguins including Jackass, Magellanic, Peruvian and Galapagos; Pygoscelid Penguins including Adelie, Gentoo and Chinstrap; Crested Penguins including Rock-hopper, Macaroni, Royal, Erect-crested, Fiord-land and Snares; Large Penguins including Emperor and King; Yellow-eyed Penguins and Little Blue Penguins. They range in size from nearly 4 feet in the Emperor, weighing about 80 pounds, to 15-16 inches in the Little Blue, weighing up to 3 pounds.

Apparently the origin of the name "Penguin" is rather obscure. Early Spanish and Portuguese sailors knew the Great Auk as "pinguin" and may have transferred this name to these birds. The reference to the Breton and Welsh fishermen referring to them as PEN (white) and GWYN (head) is dismissed. (Incidentally, the foregoing translation of these two words is probably in error, being reversed.)

This book discusses the penguins' history and prehistory. Each species is separately described in its environment, including its trials and tribulations, predators and other enemies. In addition, their bird neighbours, such as skuas, albatrosses, petrels, and Cape Pigeons are detailed and their

relationship to penguins discussed. Elephant Seals share the habitat of many penguins and Leopard Seals take their toll of the birds. One chapter describes their northern look-alikes which share the same hazardous type of environment.

The last chapter describes the interaction of penguins with man. Since the time of early explorers, da Gama and Magellan, penguins were slaughtered by the hundreds of thousands by explorers making passage around Cape Horn. Many native peoples relied on and regularly gathered eggs in season. Oil-extracting plants were set up in the Falkland Islands and it is conservatively estimated that 2.5 million birds were killed in that venture. Penguin skins were quite popular for leather goods until recently. A more modern threat to the Jackass Penguins, in particular, is OIL. When the Suez Canal was closed in 1967, oil tankers were forced to take the long route around Cape of Good Hope. Three major tanker disasters resulted in casualties of as many as 1700, 14,000 and 19,000 penguins.

The populations of most species are considered quite stable: perhaps the most endangered species is the Peruvian Penguin. Commercial exploitation of the guano beds there is destroying their burrows. — Reviewed by *Wilfred S. Richards*, 272 Gladmer Park, Saskatoon, Saskatchewan S7J 2X3.

THE GANNET

BRYAN NELSON, 1978. Buteo Books, P.O. Box 481, Vermillion, South Dakota. 336 pp. \$25.00 U.S.

This is a fine monograph on the North Atlantic Gannet, one of

Canada's largest and most spectacular seabirds. Nelson's long and detailed research on gannets at Bass Rock, Scotland, is the basis for the authoritative and readable text; indeed he is the world's expert on the species and the family *Sulidae*.

Much information on the six Canadian colonies is found in the book under each chapter topic: plumage, shape, structure and voice; numbers and distribution; behaviour; ecology; the gannet at sea; the gannet family and the order; and, the gannet and man. The numerous tables, maps, photographs and drawings add a great deal to the quality and usefulness of the book. The point-form summary found at the end of every chapter but the last is handy.

If you are interested in seabirds this book will be a valuable addition to your library; undoubtedly it will be a major reference for years to come. If you read it, you may be encouraged to visit Bonaventure Island located off the tip of the Gaspé Peninsula, Quebec, site of the largest (about 17,000 pairs), best known and most accessible gannetry in North America — Reviewed by *Philip S. Taylor*, 1714 Prince of Wales Avenue, Saskatoon, Saskatchewan S7K 3E5.



Sketch from The Gannet by John Busby



**SASKATCHEWAN NATURAL
HISTORY SOCIETY**

BOX 1784, SASKATOON, SASKATCHEWAN S7K 3S1

BLUE JAY BOOKSHOP

BOX 1121, REGINA, SASKATCHEWAN S4P 3B4

BOARD OF DIRECTORS

OFFICERS

Honorary President	Elizabeth Cruickshank	2329 Athol St., Regina S4T 3G4
President	Lorne Scott	Box 995, Indian Head S0G 2K0
1st Vice-President	Maureen du Wors	1220 Elliott St., Saskatoon S7N 0V6
2nd Vice-President	Mary Houston	863 University Dr., Saskatoon S7N 0J8
Treasurer	Wayne Harrls	Box 414, Raymore S0A 3J0
Corresponding Secretary ..	Betty Mundy	625 9th Ave. N., Saskatoon S7K 2Y6
Recording Secretary	Helen Morrison	2640 Wallace St., Regina S4N 4B6
	Pern Cordery	E11 - 1800 Main St., Saskatoon S7H 2Z6

POINTED DIRECTORS

Blue Jay Bookshop	Frank Brazier	2657 Cameron St., Regina S4T 2W5
Blue Jay Editors	Wayne Harris and Sheila Lamont	Box 414, Raymore S0A 3J0
Circulation Manager	Jim Mundy	625 9th Ave. N., Saskatoon S7K 2Y6
Conservation	Mary Houston	863 University Dr., Saskatoon S7N 0J8
Grasslands Park	Gary W. Seib	3625 Grassick Ave., Regina S4S 0Z3
Local Societies	Lawrence A. Baschak	401 - 113th St., Saskatoon S7H 1W2
Membership	Vic Harper	R.R. No. 2, Saskatoon S7K 3J5
Newsletter Editor	Dale Hjertaas	66 Vickies Place, Saskatoon S7N 2R2
Publicity	Maureen du Wors	1220 Elliott St., Saskatoon S7N 0V6
Appelle Valley	Mary Skinner	Box 777, Indian Head S0G 2K0
	and Lloyd O. T. Peterson ..	Box 866, Indian Head S0G 2K0
Special Publications	C. Stuart Houston	863 University Dr., Saskatoon S7N 0J8
South	Paule Hjertaas	66 Vickies Pl., Saskatoon S7N 2R2

REPRESENTATIVES AT LARGE

Ans deVogel	Box 219, Neilburg S0M 2C0
David Henry	Box 263, Waskesiu Lake S0J 2Y0
Grace Irvine	85 - 3rd Ave. N., Yorkton S3N 1C2
Heide Kuyt	9942 - 108th St., Edmonton T5K 2J5
Henri Lebastard	Box 250, Eastend S0N 0T0
Therine Letkeman	55 - 610 2nd Ave. S.E., Moose Jaw S6H 1B5
John McGregor	706 - 2121 15th Ave., Regina S4P 1A1
John Mitschke	9 Osler Pl., Regina S4R 3X2
Christine Pike	Box 117, Waseca S0M 3A0
Frank Scott	Box 190, Loon Lake S0M 1L0
John Wapple	Box 1045, Biggar S0K 0M0
John Williams	6 - 670 Gertrude Ave., Winnipeg R3M 2M9

RESIDENTS OF LOCAL SOCIETIES

Appelle	Lorne Rowell	Box 639, S0G 1S0
Indian Head	Roy McLaughlin	Box 896, S0G 2K0
Moose Jaw	Pat Kern	1053 Chestnut St., S6H 1A7
Prince Albert	Wayne Harrls	Box 994, S6V 5S5
Regina	Weldy Moffatt	1112 College Ave., S4P 1A8
Saskatoon	Stanley J. Shadick	Physics Dept., U. of S., S7N 0W0
Yorkton	Phil Pawluck	Box 15, S3N 2V6

DR. W.A.S. SARJEANT
674 UNIVERSITY DRIVE
SASKATOON, SASK.
S7N 0J2



Second class mail registration number 1046.
Please return unclaimed copies.
Return postage guaranteed.

Box 1784, Saskatoon, Saskatchewan
S7K 3S1

